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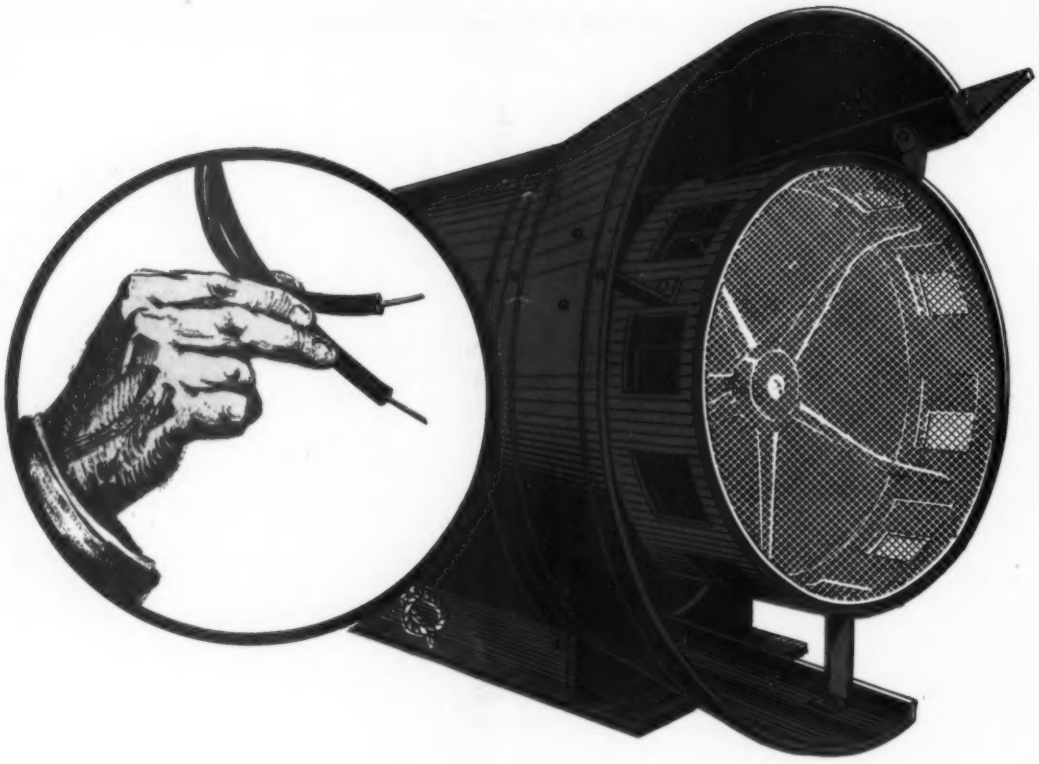

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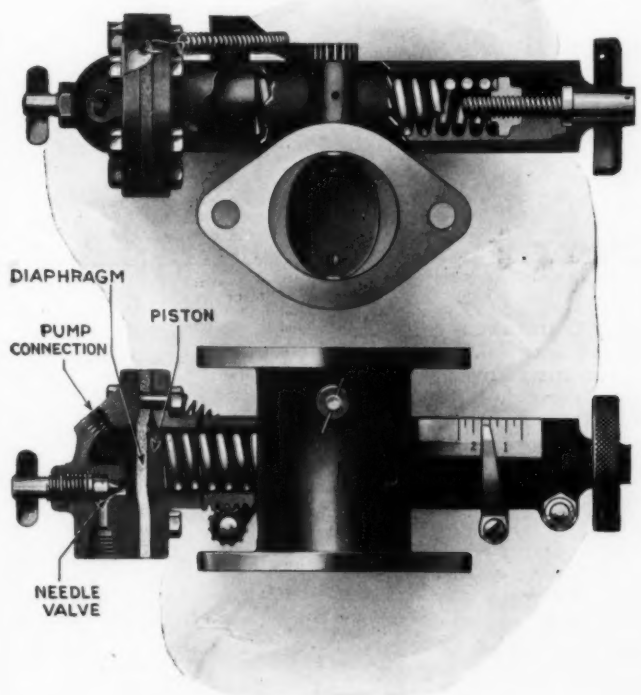


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# FIRE ENGINEERING

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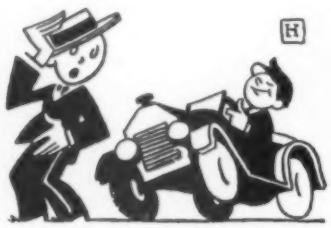

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*The Publishers*

# CONTENTS

APRIL 20, 1927

VOL. LXXX No. 8

**Oil Burners—Their Construction and Operation, by Arthur H. Senner (Illustrated)** ..... 375
Some Timely Data of Particular Interest to the Fire Chief.

**Scaffolding 32 Stories Above Street Makes Big Fire, by William J. Daly (Illustrated)** ..... 377
New York Fire Department Helpless in Fighting This Fire, Owing to Standpipe Not Being Capped.

**Second Fire Wipes Out Roof of Plant. (Illustrated)** .. 379
Apparently Extinguished But Fire Passes Through Subterranean Tunnel to Grain Elevator.

**New Rules of New York Fire Department** ..... 381
Twelfth Installment of Book of Rules to Be Published Serially in FIRE ENGINEERING.

**With the Editor** ..... 383
Comments on Current Events and Live Topics by Our Editorial Staff.

**Questions and Answers** ..... 385
Replies to Questions on All Manner of Subjects of Fire Fighting and Fire Protection.

**Recent Important Fires Specially Reported (Illustrated)** 387
Blaze in Kenmore, N. Y., Theatre Block—Burnings of Week.

**Of Interest to Volunteer Fire Departments (Illustrated)** 395
Matters of Interest to Volunteer Firemen.

**Industrial Plant Protection (Illustrated)** ..... 392
Some Items of Interest to Industrial Plant Brigades.

**The University of Illinois Course of Instruction in Fire Protection (Illustrated)** ..... 382
Water Works and Piping, by Clarence Goldsmith.

**Fire Department Activities** ..... 403
Newsy Notes from All Over the Country with Matters Firemanic.

**Fire Department Improvements** ..... 404
Record of Business Activities in the Fire Protection Field.

**Recent Patents (Illustrated)** ..... 407
Description of Patented Inventions of Interest to Fire Department Officials.

**False Alarms** ..... 408
The Humorous Side of the Fire Protection Profession.

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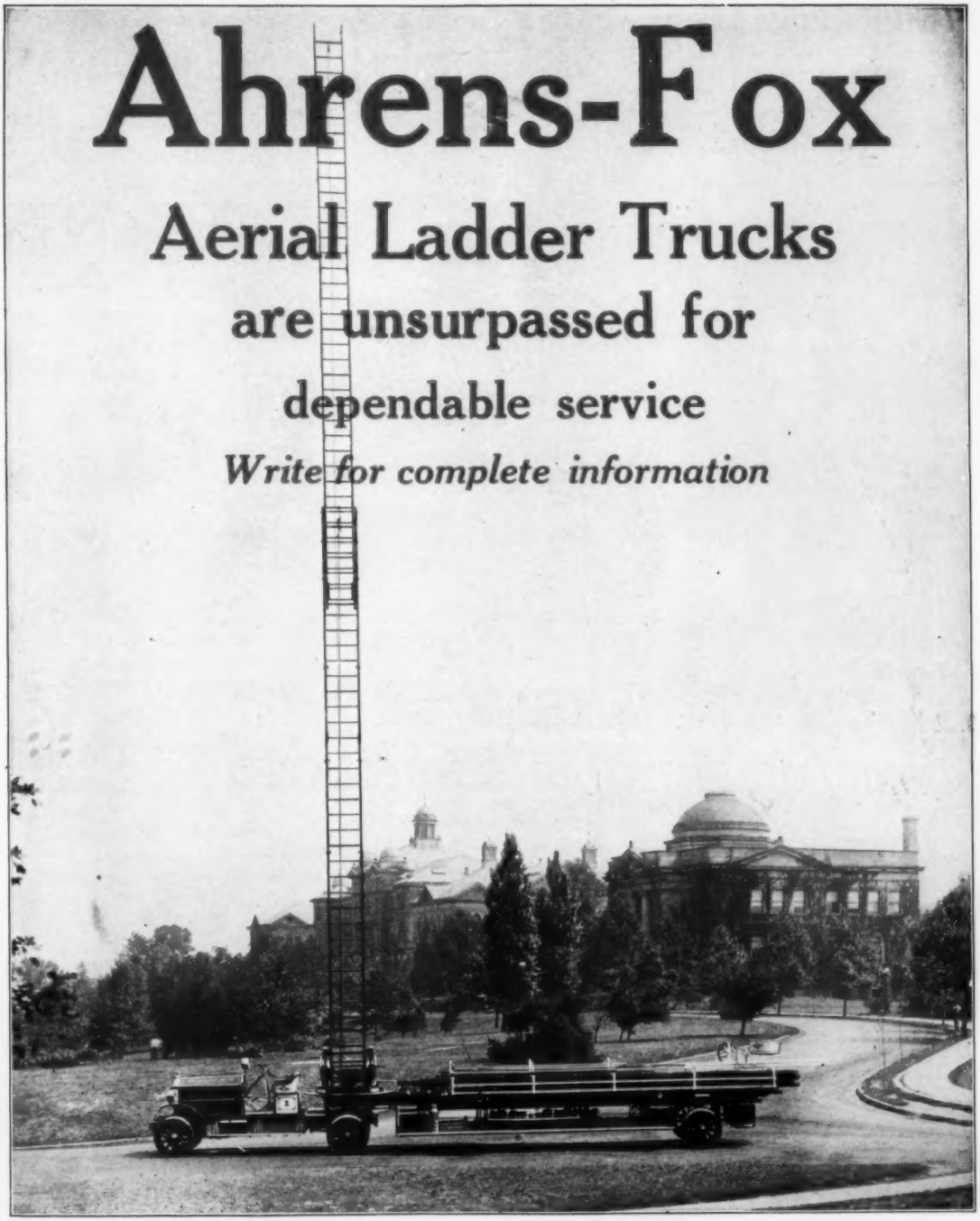

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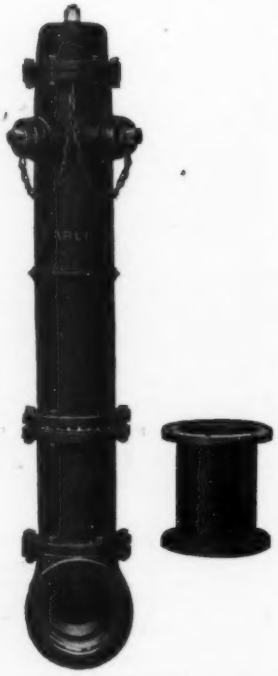
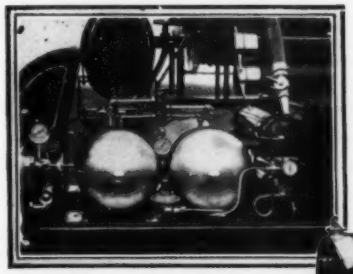
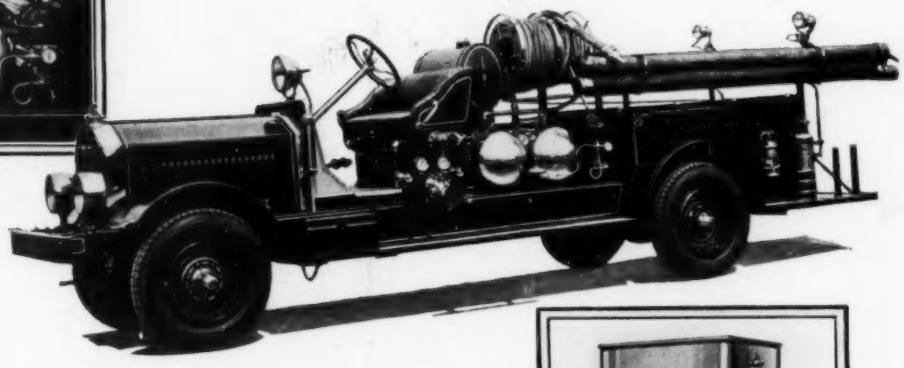


# DARLING
## FIRE HYDRANTS



Above: Foamite Chemical Tanks mounted on apparatus in place of the usual but less effective soda-acid tanks. Each tank generates nearly 300 gals. of Firefoam



Right: the Childs "Thoroughbred" Standard Heavy Duty Motor Fire Apparatus

# A line-up that is making fire protection history

IN more than 900 municipalities today, Foamite-Childs apparatus and equipment are helping Fire Chiefs to improve their records in the reduction of fire losses.

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Three different forms of *Foamite* equipment are pictured on this page, and at left below is shown a "close-up" of genuine Firefoam in action.

In the motor apparatus field, the *Childs* nameplate has long been recognized as a guarantee of all that is sound, up-to-date, practical. A recognition earned by thirty years' experience—thirty years' cooperation on the day-to-day problems of the fire-fighter.

All this engineering knowledge and experience has now been built into the *Childs* "Thoroughbred," pictured above. This splendid, modern, heavy duty apparatus answers every demand of strenuous service—with something to spare. Power—quick getaway—speed on the road—sustained pumping—accessibility of equipment—and thoroughbred appearance!

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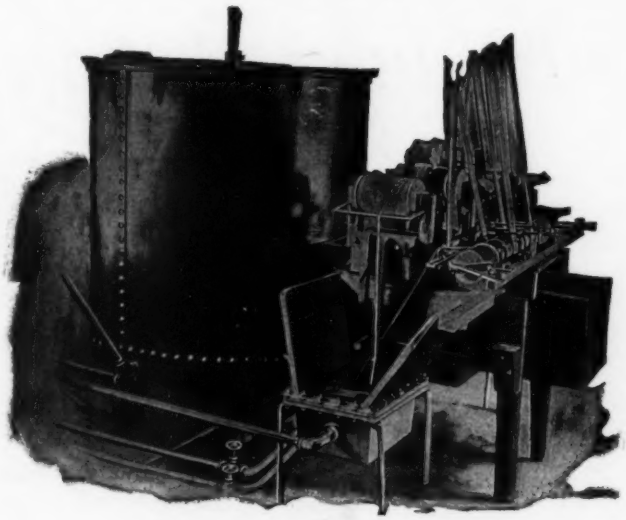
AMERICANS SHOULD PRODUCE THEIR OWN RUBBER . . . . . Harvey S. Firestone



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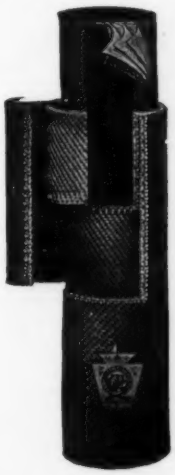

Many other details of our process, besides this one, are illustrated and explained in a little booklet we shall be glad to mail you for the asking.—"Wax and Para Gum Treated Fire Hose.—How It Is Made." Address:

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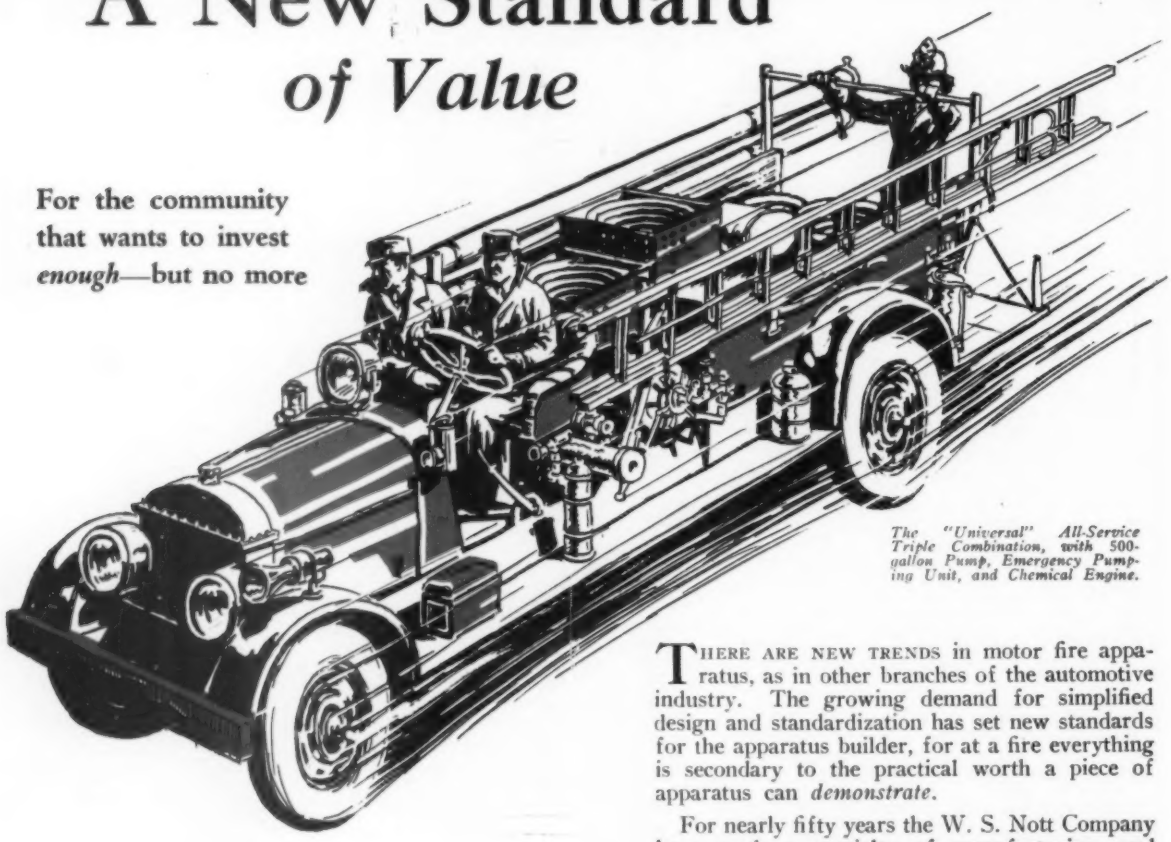

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# FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

*The Journal of the Fire Protection Profession*

VOLUME LXXX APRIL 20, 1927 NUMBER 8


# Oil Burners—Their Construction and Operation

## Some Timely Data of Particular Interest to the Fire Chief—Safety Suggestions—Maintenance Hints


By ARTHUR H. SENNER, Assistant Mechanical Engineer, Division of Agricultural Engineering, U. S. Department of Agriculture


*THE problem of the oil burner for domestic heating is a very live one to the fire chief, in view of the increased adoption of this method of heating private residences throughout the country. The fact that such heating plants are, in the great majority of cases, being operated by individuals who are unfamiliar with the principles of oil combustion and are rank novices in the handling of this type of heater makes the fire hazard all the greater. The following paper, prepared by experts in the United States Department of Agriculture, will provide the fire officers with many points of value in warning householders of the risks to be avoided in the maintenance of their oil heating plants:*

In contemplating the installation of an oil burner provision for storing fuel should be considered. For coal, the average home owner generally provides storage capacity ample to contain

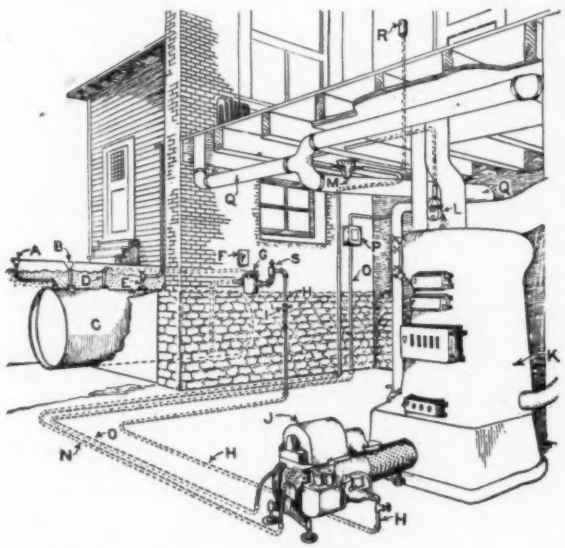



Fig. 1

Complete automatic oil-burner installation. *a.* Filling box; *b.* Clean-out and measuring box; *c.* Underground storage tank; *d.* Tank-gauge tubing; *e.* Air vent; *f.* Tank gauge; *g.* Strainer; *h.* Oil feed pipe to burner; *i.* Globe or self-closing valve; *j.* Oil burner; *k.* Heating plant; *l.* Safety-control switch; *m.* Junction block; *n.* Thermostat wire to burner; *o.* Service wire to burner; *p.* Cut-out switch; *q.* Pipes to radiators; *r.* Room thermostat; *s.* Antisyphon valve.

all the coal used during the heating season. With oil this is not usually the case.

Large storage tanks are installed in various ways and usually must conform to the ordinances which regulate such matters in the particular locality. From this tank the oil must be fed to the burner by suitable means, since regulations restrict the quantity of oil which may be stored above the burner level. A simple means of transferring oil from the main to an auxiliary tank is by vaporizing burner with automatic control. The ignition is by a continuous gas flame, which also serves as a source of heat for the vaporizing plate. In many types this transfer of the fuel from the storage tank to the burner is made automatically by means of a pump or by suction produced at the burner itself. A typical full-automatic installation is shown in Fig. 1.

### Oil Burners

The primary function of an oil burner is to break up the oil into fine particles and so mix it with air that proper combustion will result under suitable conditions of temperature. A number of equally effective schemes are employed, one of which is shown in Fig. 2. Combustion, or burning, is any kind of chemical combination in which heat is liberated. In domestic heating combustion is caused by the combining of the elements of the fuel with the oxygen of the air. When this combustion is completely carried out the maximum heating value of the fuel is realized.

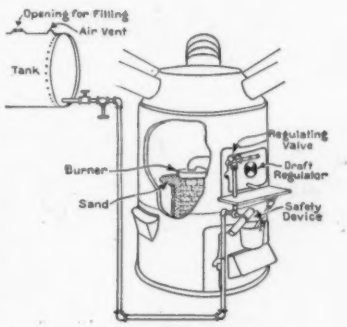



Fig. 3

A simple manually controlled vaporizing burner installation in a warm-air furnace.

### Classification

There are on the market a number of burners for use in house heaters, varying in the method employed to prepare the fuel for combustion. In general they operate upon one or the other of two broad principles—namely, the vaporization or the atomization of the oil prior to burning. Burners may be classed, then, as either vaporizing, comprising the so-called gravity-feed type, or atomizing, including those in which the oil is broken up by mechanical or spray devices.

### Gravity-feed Vaporizing Type

This is the simplest type of burner, very often consisting merely of one or two rough castings which are set inside the furnace (Fig. 3) and its initial cost is low. Some device, such as a "hot plate," is essential for volatilizing the oil so that a vapor will be produced, as illustrated in Figs. 4, 5, 6 and 7. The air to support combustion is generally brought into the furnace by the natural draft produced by the chimney. Some rather ingenious means are used to in-

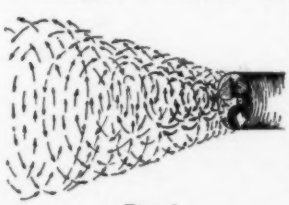


Fig. 2

A method of commingling air and atomized oil by whirling each in contrary direction in conical streams. The oil stream comprises the inner cone, while the air stream comprises the outer.

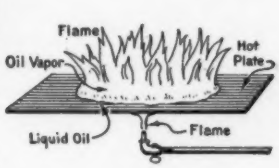



Fig. 4

Illustration of burning oil by vaporization method.

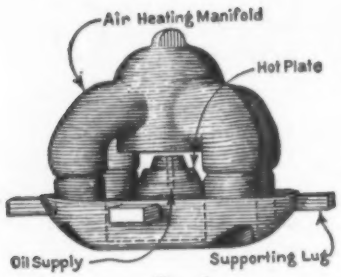



Fig. 5

Casting which constitutes a simple gravity-feed vaporizing type burner.

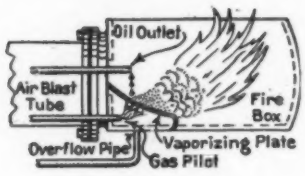



Fig. 7

Vaporizing type of burner in which the gas pilot also heats the vaporizing or hot plate. Air is supplied positively by a motor-driven blower.

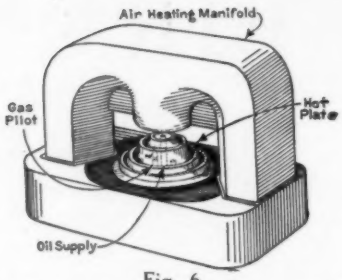



Fig. 6

Casting of a vaporizing burner with which is incorporated the continuous-burning gas pilot and plate-heating flame.

duce an intimate mingling of this air with the vaporized fuel, but in general good combustion is not obtained by this method unless a highly volatile fuel is used. In the cheapest burners of this class the control is entirely manual. In some cases automatic control has been applied with apparent success.

### Atomizing Type

The atomizing type of oil burners may be subdivided into those which break up the oil by purely mechanical means and those which atomize the oil by spray devices.

In one mechanical-type atomizing burner the oil is put under pressure and forced through a small opening to break it up into minute particles, and it enters the furnace as a vapor spray. Air

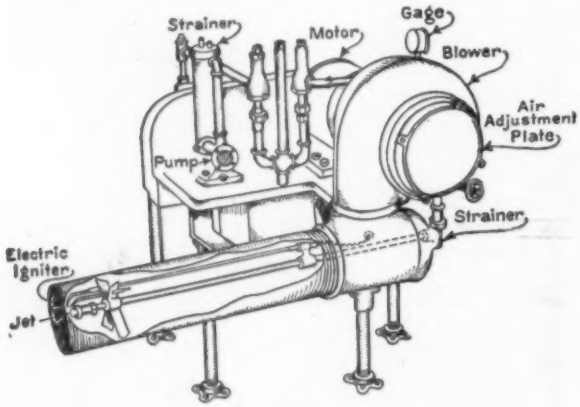



Fig. 8

Motor-driven atomizing burner of the electric-ignition type.

is supplied by a blower or pump and so regulated as to bring about the proper combustion of the fuel (Fig. 8.)

In another type of mechanical atomizing burner the oil is broken up by being thrown from the periphery of a revolving disk or cup. The disk or cup speed is relatively high and is sometimes obtained by positive gear drive or by friction drive from an electric motor. Fig. 9 illustrates a motor-driven centrifugal atomizing burner.

The spray type of atomizing burner consists of air and oil nozzles so arranged that air supplied by a motor-driven compressor blows directly over the oil nozzle and creates a partial vacuum, as illustrated in Figs. 10 and 11. The oil is drawn up from the supply reservoir by the vacuum thus formed and is atomized or broken into minute particles by the air pressure, in preparation for ignition. The rate of feed is governed by the air pressure and the size of the nozzle openings. This principle is not unlike that of the ordinary carburetor employed in the gasoline engine.

The atomizing type is generally controlled automatically by a room thermostat which so regulates the burner as to maintain the desired room temperature. Fig. 12 is a sketch of one type of atomizing burner, the mechanism of which is practically entirely within the furnace. The mixing chamber is practically the only element of the burner proper which is exterior to the furnace.

### Combustion

Oil fuel used by domestic oil burners contains principally hydrogen and carbon, with much smaller quantities of oxygen, nitrogen, and sulphur. Of these elements, the carbon, hydrogen, and sulphur are the ones that burn or combine with oxygen. The oil fuels that are now employed for domestic heating are very uniform in composition and contain roughly 84 per cent carbon and 13 per cent hydrogen; the oxygen, nitrogen, and sulphur taken together compose the other 3 per cent. A pound of fuel of this composition will require about 14¼ pounds of air for perfect and complete combustion.

Insufficient air supply is one cause of clouds of dense smoke and soot. Sometimes the draft prevailing under this condition is not sufficient to carry off the sooty, smoky products of combustion, and they permeate the entire house. This form of combustion is inefficient in that the fuel is not entirely consumed. It is not easy to supply precisely the amount of air theoretically required for perfect combustion and even if this were accomplished the intermingling of the air and oil probably would not be sufficiently complete to give perfect combustion. An excess of air is essential to insure that each subdivided bit of oil is provided with the amount of air necessary. In practice, possibly 25 to 30 per cent more air is supplied than that which is theoretically required.

### Ignition

Burners may be subclassified according to the manner in which the fuel is ignited. With the manually-controlled gravity burner, the hot plate is pre-heated by a wick which is

(*Continued on page* 390)

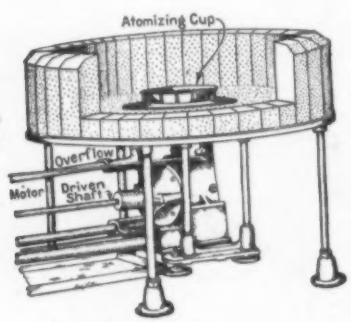



Fig. 9

Motor-driven centrifugal atomizing burner.

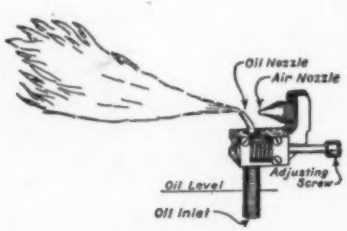



Fig. 10

Atomizing of oil by air jet or spray.

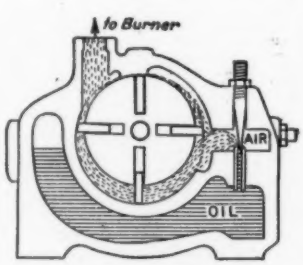



Fig. 11

Application of rotary pump and needle valve to atomize oil and mix it with air.

# Scaffolding on Skyscraper Makes Difficult Fire

## Falsework of Uncompleted Hotel at New York Burns Unchecked— No Siamese Connections for Standpipe—Elevators Out of Service

By WM. JEROME DALY

A FIRE, starting from some unascertained cause on the 39th floor of the uncompleted forty story Sherry-Netherlands apartment hotel at the northeast corner of Fifth avenue and 59th street, gave the New York Fire Department one of the severest tests of its efficiency and after burning itself out in six hours and doing approximately $200,000 damage, caused one of the bitterest conflicts of opinion which ever engaged the attention of the officials of the city of New York.

"The fire in its incipiency, could have been extinguished effectively with a garden hose, if there had been water available

**The Sherry-Netherlands Hotel Fire**

White spot in photograph is illumination from burning scaffolding on hotel tower, and streamers of light are burning planks dropping to street and surrounding buildings. Tall structures in immediate vicinity are well shown.

on the 39th floor" said Battalion Chief James T. Ferris to the writer several hours afterward. Ferris was the first chief officer to climb by stairway to the peak of the tallest structure on Fifth avenue. The elevators were not running, but we will come to that later.

The hotel is 110 x 150 feet and stands on the site of the old Netherlands Hotel, in its hey day, one of Fifth avenue's famous hostelries. It is directly across on 59th street from the new Savoy-Plaża Hotel, which stands on the site of the old Hotel Savoy—equally famous as a rendezvous for the fashionable set of old Gotham. Diagonally across to the southwest is the Hotel Plaza. Directly west is the lower border of Central Park where stands the huge statue of Gen. Sherman of Civil War fame. To the north and immediately adjacent is 784 Fifth avenue, a six story limestone structure, tenanted by an automobile manufacturer, a florist, a tailor, a dress and gown establishment and a fur importer. At No. 787 Fifth avenue on the corner of 60th street is an eleven story modern structure with a bank on the ground floor. Further east on 60th street at No. 4 is the Harmonie Club, a modern four story structure. The balance of the block eastward on the 59th street side is mainly small buildings of not very recent construction, such as restaurants, art stores and similar trades catering to a combined residential and commercial quarter.

### Discovery of the Fire

It was about 7:30 p. m. Tuesday evening April 12th, when Mr. Fred H. Greenebaum, a banker and honorary battalion chief of the New York Fire Department was entering the Hotel Plaza. Chief Greenebaum called the attention of Patrolman Byrnes of Traffic B. to the smoke issuing from atop the new hotel. The policeman at first was reluctant to believe that it was a fire and offered the suggestion that it might be a plumber's furnace. The banker-fireman however told the officer that he ought to "pull the street box" which he did.

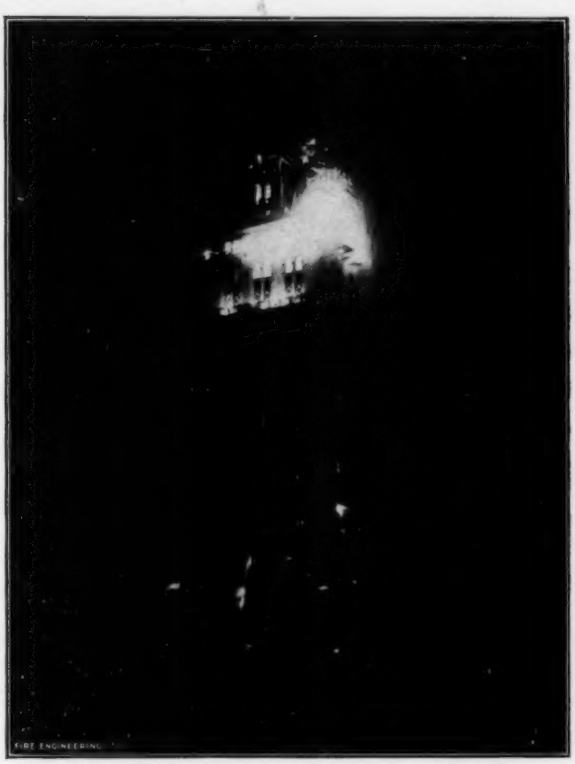
Three engines, two trucks, Battalion Chiefs Ferris and Flood and Deputy Chief of Department Carlock arrived on the first alarm. They found several workmen leaving the building, but the latter professed to know nothing about the fire. One of the six elevators in the building, which is used in the day time for conveying workmen and others up and down the structure was shut down for the night. Chief Carlock's chauffeur who was a former elevator constructor and knows that particular craft, ran to the cellar to throw "juice" into the motor for the elevator, but the fuses had been removed for the night.

### Refuses to Allow Firemen on Hoistway

On the court yard in the rear, there was a wooden hoistway or scaffolding extending to the peak of the building. In this tinder structure was a hod-hoist with its motor alive and the operator present. The firemen threw eight rolled-up lengths of hose on this hod hoist but when two or three of them attempted to get aboard, the hoist operator refused to carry the men. He said the law was plain, that it was a violation of the code of ordinances to carry other than materials on that type of lift and that "for all the fires this side of hell" he wouldn't let a blankety-blank-blank fireman ride on it.

### Standpipe Not Equipped with Siamese Connection

Meanwhile, the first two companies had stretched to the standpipe of the building. This standpipe had not as yet been equipped



**The Tower of the Sherry-Netherlands Hotel**

The burning scaffolding is shown, the streaks of light being the blazing lumber dropping from the tower.

with the required siamese connection on the front of the building. Chief Ferris had started up the stairway—the firemen after him. They climbed and climbed until they reached the 39th floor. They could go not much further. They found the fire to be in some wooden scaffolding and timbering used by plasterers and other workmen who were at work in a room used for the machinery for the elevators and ventilating system of the hotel, just previous to the fire.

Ferris groped about for water, but all he found was an empty bucket or two. There was a garden hose lying around—evidently used in the daytime by workmen for mixing materials. The garden hose was as dry as a bone. In the interim, other firemen had trudged rolls of hose on their shoulders up the long stairway to connect to the standpipe.

The fire, without water, soon drove the firemen downward. They had long since called for water, but none came. Members of truck companies were sent to every floor to examine every outlet or valve along the line of the standpipe. The valves and outlet connections were covered with burlap to protect them from the weather and falling materials. On the 3rd floor the

**Water Tower Wetting Down the Surrounding Structures During the Sherry-Netherlands Hotel Fire**

standpipe line was bleeding volumes of water. It was plugged right then and there, but still no water arrived above.

The hydrants in the street showed on the gauges approximately fifty pounds. The engines were giving 275 pounds. The hose was holding out splendidly, but the fire was traveling. The firemen never did get to the eight lengths of rolled hose on the hod-hoist—the hoist operator's judgment was right, so was the law against carrying human beings on such contrivances. The fire had traveled through the open window to the top of the hod-hoist. The hoist fell—hose and all. The towering wooden staging was now ablaze. Chief Carlock ordered a second alarm and then a third.

### The Law on Standpipes

It was dark. The fire began to show in the sky; still no water. The standpipe line must have been open at the top, for every other inch of it was found to be either tight or made so by the truck company men who scrutinized it all the way. And right here it might seem appropriate to say something about the law on standpipes.

Rule No. 36 of the Board of Standards & Appeals, supported by Section 581 of the Code of City Ordinances requires the constructors of buildings over 85 feet or seven stories in height to provide a standpipe with outside siamese connection, with regulation outlets on each floor and as the work of construction progresses, and the pipe line is added to, the law specifically states that the standpipe riser *shall be capped*.

In this instance, there was no outside or siamese connection, so the firemen hooked up to the standpipe line at the first, second and third floors.

Assistant Chief Martin arrived on the third alarm, as did Chief of Department, John Kenlon, who then ordered special calls for Engines 91 and 35—each equipped with Ahrens-Fox apparatus. Into a second standpipe line these two pieces were connected. By this time, Kenlon ordered all hands to stay below the fire. The fire was now a municipal Vesuvius. It stood out like a beacon. You could read a newspaper 500 feet below in Central Park. Thousands upon thousands of motorists drove right to that point or as near to it as they could get. Congestion in Fifth avenue made Armistice Day look like a small town country fair, in comparison.

### Chief Sounds Fourth and Fifth Alarm

Kenlon ordered a fourth alarm, for the embers were beginning to fall for blocks around. The wooden staging was now beginning to fall. The fire had possession of the peak of the tower of the skyscraper—on all sides. Firebrands four, six and ten feet long were beginning to shoot like skyrockets. They landed within the block. Fortunately, the wind was not what you would call high. It was moderate, which was very lucky.

The firemen worked desperately. They knew and some of them exchanged with one another the confidences that the New York Fire Department was being watched by the firemen of the world. Across the street on the 22nd floor of the Savoy-Plaza standpipe streams were beginning to play onto the first off-set of the Netherlands, where fire brands and embers were burning fiercely.

Inside the hotel afire, the firemen were now getting some water on the 28th floor, but nothing in comparison to what should have been delivered, if the standpipe line was solid throughout. On the 28th floor they battled furiously with what water they had, but even that was ineffectual. Kenlon now sounded the fifth alarm. The alarms and their order of time are as follows:

STATION 942—5th Ave. and 60th St.

7:45—First alarm.
8:14—Second alarm.
8:17—Third alarm.
8:37—Special call for 91 Engine.
8:37—Special call for 35 Engine.
8:54—Fourth alarm.
9:25—Fifth alarm.

### Men and Apparatus in Service

These gave to the fire, 23 engine companies, six truck companies, four battalion chiefs, two deputy chiefs, one assistant chief of department, the chief of department, 14 engines on location, 4 trucks on location, one water tower, one gasoline-oil fuel truck, one rescue company and the department ambulance as well as a few other public ambulances. Only one fireman was slightly injured.

The tower was put to work on the corner of 60th Street and Fifth Avenue, covering the roofs of adjoining structures which by now were littered with burning brands.

### Catch Leaking Water in Improvised Troughs

The beacon raged on. It had its own way in the uppermost six or seven stories at least. Below that point the firemen did the best they could, and in further proof of the charge that the top of the standpipe line was uncapped, is the fact that tons of water—veritable Niagaras were coming down, from where the firemen did not know exactly, but they made some use of the escaping water, by catching it in improvised troughs and flumed it out the windows where the wooden scaffolding was merrily ablaze.

During all of this, the fire had dropped down the elevator shafts and at least three lines were needed there to stop the bottom of the building from burning. The wooden structure at the first floor over the sidewalk was afire almost continuously from flaming scaffolding falling onto it.

Apparatus in the street, excepting pumping engines had to be moved a block away. In 59th Street, there were several fires—all of them however nipped in the bud. The rear of the adjacent building on Fifth Avenue and the rear of the adjacent

(*Continued on page* 380)

# Second Fire Wipes Out Group of Plants

## First Fire Apparently Extinguished, but Fire Passes Through Tunnel to Grain Elevator—Soon Gets Beyond Control

THE fire described in this article of the series on administration occurred in a small northwest city.

The property involved is shown in the sketch herewith.

The group of buildings constituted a very severe layout once fire gained headway.

A grain elevator, of timber construction, 70 feet high, together with a frame flour mill 5 stories in height with a frame storehouse 3 stories in height attached, comprised a layout in which fire gained great headway.

The coal yard, freight shed and grain storehouses along the railroad track all were of highly inflammable construction.

Although the power plant directly adjacent to the flour mill was well built, it was not able to withstand the exposure when the fire in the mill reached its height.

### The Department

The department in the city in which this fire occurred consists of 6 engine companies and 2 truck companies.

Response to alarms is as follows: First alarm, Engine Cos. Nos. 1 and 2; Truck Co. No. 1.

Second alarm, Engine Cos. Nos. 3 and 4 and Truck Co. No. 2.

A general alarm brought out the 2 remaining companies, Engine Cos. Nos. 5 and 6.

All apparatus were motor propelled and all pumpers were of 700-gallon capacity with the exception of Engines Nos. 4 and 6 which were 500-gallon capacity machines.

Water supply in the neighborhood of the fire was satisfactory, although the pressure was not sufficient to operate hydrant lines, it being in the neighborhood of 30 pounds when there was a heavy draught on the 10-inch main.

Five hydrants were within easy reach of the fire, as shown on the sketch.

### The Fire

The fire started around 3 o'clock in the afternoon of a working day in the basement of the 5-story frame flour mill.

The superintendent of the plant immediately had an alarm transmitted and in the meantime devoted the efforts of the crew to fighting the fire. Due to the denseness of the smoke in the basement of the flour mill men could not operate at close range so that the buckets employed were not effective in controlling the fire.

When the first alarm assignment arrived the fire was burning quite briskly in the basement of the flour mill and threatened to come up through the hoistways and chutes to the upper floors.

Upon its arrival Engine Co. No. 1 was stationed at hydrant No. 2 and two lines stretched at once to the flour mill, both lines operating down stairways leading into the basement.

Engine Co. No. 2 was stationed at hydrant No. 1 and a single line stretched to the same building.

These three lines after operating about a half hour had the fire apparently completely extinguished. At the time the department left the fire scene there was a large amount of water in the basement of the flour mill and it appeared that a good job had been done in wetting down.

The apparatus returned to its station and the mill was closed shortly after the fire department left for the day. A few men were kept on hand to move some of the flour from the ground floor of the flour mill to the rear building in order to reduce damage from water. Other men were employed in cleaning up on the ground floor.

The mill shut up finally at 6 o'clock and all but the watchman left.

At about 8 o'clock the watchman saw what he thought was the reflection of the setting sun in the upper windows of the grain elevator, but upon closer investigation discovered that this buildings was afire, with smoke rolling out of the back of the building in great volumes.

He immediately transmitted an alarm, bringing the same assignment as before.

Engine Companies Nos. 1 and 2 were placed at the same hydrants as in the first fire and started operation.

The company commander noting the great progress the fire had made in the grain elevator immediately transmitted a second alarm.

This brought out Engine Cos. Nos. 3 and 4 and Truck Co. No. 2.

Engine 1 which was stationed at hydrant No. 2 stretched in two lines to the grain elevator. Due to the type of construction employed, it was not possible to reach the fire in the upper part of the building, and the department had to content itself with operating into the lower part of the building and covering the outside as well as possible with the streams available.

Engine Co. No. 2, placed at hydrant No. 1, stretched in a single line to the rear of the grain elevator.

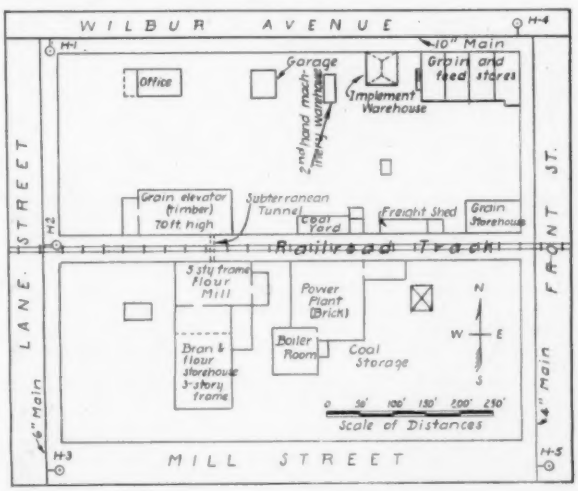
These lines held their respective positions and were operating on the elevator when the two engine companies on the second alarm responded.

Engine Co. No. 3 was placed at hydrant No. 4 and a single line stretched in to the grain elevator. This line operated from a ladder through the windows near the top of the elevator and did fairly effective work.

Engine Co. No. 4 was placed at hydrant No. 3 and a single line stretched to operate on the front of the grain elevator. This line also operated from a ladder placed by one of the truck companies and held its position for possibly 10 minutes when it was forced to retreat by the increasing intensity of the fire.

At this time the chief of the department arrived and immediately transmitted a general alarm calling out Engine Companies Nos. 5 and 6.

In the mean time he ordered a second line laid from Engine




Co. No. 2 at hydrant 1, this line operating on the rear of the grain elevator.

A second line was also ordered laid from Engine Co. No. 3 at hydrant No. 4, this line taking its position on the ground alongside of the lines from Engine Co. No. 2.

A fairly strong wind was blowing from the northwest carrying the fire from the top of the grain elevator toward the 5-story frame flour mill. The seriousness of this situation was not at first grasped but by the time Engine Cos. 5 and 6 had arrived at the scene it constituted a very serious hazard.

Engine Co. No. 5 was placed at hydrant No. 5 and a single line stretched to cover the flour mill on the railroad side.

Members of Engine Co. No. 6 helped man one of the lines from Engine Co. No. 2, which was shifted to cover the exposure to the coal yard near the grain elevator.

With this placement of lines the department continued to operate for possibly 10 minutes more when it was evident that the elevator was going to be lost, fire having completely involved it on the inside.

A quick shifting of lines to cover the 5-story frame flour mill for a short time appeared to hold the fire from spreading to this structure, but it was not immune very long. Within 20 minutes after the arrival of the general alarm assignment the frame flour mill was fully involved and the power plant alongside was seriously endangered.

Lines were subsequently shifted to cover the power plant but due to the intense heat from the fire in the frame flour mill and warehouse adjoining the lines could not operate between the

power house and the flour mill to cover exposures with a result that fire eventually entered the power plant and it too was doomed.

While this was going on the coal yard across the tracks from the power plant became involved, and shortly afterward the freight shed.

When it was found that the power plant fire had gotten to such a point as to make futile any efforts to control it, attention was directed toward the boiler end of the plant.

Here, due to the construction and the protection afforded by the absence of highly combustible materials in the power plant the department was able to hold the fire. The fire, however, involved part of the coal piles at the rear of the power plant.

North of the railroad tracks the fire was held in the freight shed, and the grain storehouse alongside was saved.

The buildings along Wilbur Avenue were also saved by promptly shifting lines from Engine Cos. 2 and 3 to cover these buildings.

As it was, the grain elevator, the flour mill and flour storehouse, the power plant, the coal yard and freight sheds were compeltely destroyed.

The Editor's ideas on the handling of this fire will be given in the next issue of this journal.

## Scaffolding on Skyscraper Makes Big Fire

(*Continued from page 378*)

buildings on 59th Street were at some time afire in the vicinity of the window casings.

It is no reflection on the efficiency of the New York Fire Department to say that the fire practically burned itself out—at least above the 28th floor. It swept through the upper floors unhampered. It was however prevented from coming downward. Kenlon was satisfied, so was everybody else, from the Mayor down, for officialdom in all its phases was present—it was "fire night in New York."

### Enormous Crowds View Fire

The police, from the commissioner down were hard pushed by a milling, surging crowd—every one of them apparently eager to get near enough to be in the way of the shooting embers. Central Park never before in its history had so many people in it at night time. The drives and the lawns were a solid pack of humanity and fuming motor exhausts—the sight was magnetic—it just held you. Whether bound for the theatre, for dinner, for home or for somewhere, you just couldn't break away. It may seem cruel to say so, but there were some folks openly frank enough to say that they were waiting in the expectation that the whole top of the tower might collapse into Fifth avenue.

At one o'clock, Chief Kenlon said the fire, while not out, was under control. The sky was no longer scarlet. A few remaining sticks were still a dull red, but for all that the fire was out. The firemen rested a bit high up in the building. They were content to take it easy until dawn. At about six o'clock, they climbed aloft—the last three stories on ladders—and gave it a final dash.

### Standpipe Plugged with Cement Bag

A salamander, overturned, was found on the 39th floor. The workmen say it had not been in use. The firemen cannot refute it. On the floor near the uppermost length of the standpipe riser, the firemen found an empty cement bag. Chief Ferris says it was used to plug the top of the standpipe line, by inserting and filling it with cement. The officials of the Building Department claimed that the standpipe was O. K. but that the fire department was unable to raise water to that altitude. The firemen pointed to the successful test at the Woolworth Building in refutation of this. Then the building officials said the water pressure was low.

William W. Brush, chief engineer of the Water Department gave this the lie and pointed to the official record of water pressure on the mains in that vicinity—fifty pounds.

Chief Kenlon said some caustic things about erecting forty and fifty story fireproof buildings and then building for the same distance a wooden hoistway. He declared that such hoists should be of steel.

### Results of Investigations Not Yet Made Known

Up to this writing, the results of the several investigations which were started, have not been made known. The Fire Department is not in agreement with the Building Department and the Building Department is not in agreement with the Water Department.

As one who observed the fire and the work of the firemen, the record of the pressure on the hydrants and the pressure on the lines, the placement of those lines, the decorum and the generalship which marked the operations of the fire force and particularly the chief officers, it may not be amiss for one who has been close to fire fighting for thirty years to say here that the inability of the first alarm assignment to subdue the

**The Ruins of the Scaffolding on the Sherry-Netherlands Hotel Tower, After the Fire, Showing Damage to Structure.**

fire at the point of origin, was solely attributable to the failure or neglect of both human and mechanical agencies before the firemen arrived.

In January two years ago, the New York Fire Department confined and extinguished a fire on the 42nd floor of the Equitable Building. Without a solid pipe line, no fire force can expect to be successful at such heights.

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**Reading, Mass., Apparatus Damaged**—The new Reading, Mass, apparatus purchased for $12,000 collided with a heavy truck. Chief Ordway and the driver were thrown from the machine and the apparatus was badly damaged.

**New Orleans, La., Purchases Pumpers**—The Ahrens-Fox Company was awarded a contract for supplying two pumpers for New Orleans, La. No action was taken on the purchase of a chemical car.

**Hollywood, Fla., to Erect New Station**—A contract has been let to build a new fire station in Hollywood, Fla., to take the place of the one that was destroyed by the hurricane last September.

# New Rules of the New York Fire Department

## This Twelfth Installment Covers Sections Dealing With Reports, Requisitions and Property Accountability and Uniforms

*FOLLOWING is the twelfth installment of the "Rules and Regulations of the Uniformed Force of the Fire Department of the City of New York," just issued by that department, and which are to be published serially in their entirety in* FIRE ENGINEERING. *This book has been compiled and edited by Captain John J. McCarthy, of H. & L. No. 43, detailed in charge of the Division of Public Assembly at Fire Headquarters, who worked under the personal supervision of Chief John Kenlon. This installment includes sections covering the making of Reports, Requisitions and Property Accountability and Uniforms:*

### Reports (Continued)

SEC. 280. When a member changes his residence, is transferred, or is changed from one platoon to another, the commanding officer shall forward a report to that effect to the commanding officer of the company in whose district the member affected resides, so that the card indexes showing the group and platoon assignments of members may be accurately maintained.

SEC. 281. When sick leaves of absence are granted to members, commanding officers shall forward a report giving full particulars.

SEC. 282. Commanding officers shall forward a report when members are excused to attend court, stating the name and rank of member, the court attended, time of leaving quarters, time of return thereto, and nature of court proceedings.

### Requisitions and Property Accountability

SEC. 283. In addition to the Department property now accounted for in the annual property returns, keys for high pressure service telephone boxes shall be carried.

Chiefs of Battalion shall retain official badges issued to them, when transferred.

Officers transferred from one borough to another shall retain official badges, but shall leave the telegraph and inner box keys in the command from which they are transferred. They shall make immediate application, in person, for an issue of keys for the fire alarm system in the borough to which they are transferred.

SEC. 284. A book form of Property Returns (two copies) shall be forwarded to each company, division, bureau, etc., to be made out as of December 31st of each year; one book to be retained by the officer preparing it and the other to be forwarded to the Division of Requisition and Property Accountability, when directed.

Company property returns shall be examined and endorsed by Chiefs of Battalion.

The property returns of Chiefs of Battalion shall be examined and endorsed by Deputy Chiefs.

SEC. 285. For all supplies received from the Repair Shop, Division of Buildings, or Telegraph Bureau, which are expended in making repairs to apparatus, buildings, etc., no invoice shall be issued but a receipt obtained for such from the receiving officer; such supplies are not to be accounted for on the Property Returns.

SEC. 286. For all other supplies received, one invoice and one receipt (Form No. 209) shall be prepared by the division or officer issuing such; the invoice to be retained by the receiver of the goods and the form of receipt, properly signed, shall be returned to the division or officer with whom it originated.

There shall also be forwarded with the Property Return book a receipt (Form No. 209) for any apparatus, supplies, etc., which may have been forwarded to the Division of Apparatus or other Division, and not returned before the expiration of the year. Property Returns book, as explained, should goods not be repairs to quarters.

SEC. 288. Requisitions for repairs to apparatus shall specify the exact nature of repairs needed. When necessary, a memorandum shall be forwarded with such requisitions giving full details. All such requisitions shall specify the class designation and registered number of apparatus involved.

SEC. 289. When forwarding apparatus, supplies, etc., to the Division of Apparatus or other division for repairs, one invoice and two receipts (Form No. 209) shall accompany such; the invoice to be retained by the receiver of the goods, and the two receipts, properly signed, shall be returned to the issuing officer. One of these receipts is to be forwarded with the Property Returns book, as erplained, should goods not be returned before the expiration of the year.

Repairs shall not be invoiced on companies.

No stationery, except Journals, shall be carried on Property Returns.

SEC. 290. For articles lost or to be condemned, etc., Form No. 203 shall be prepared, in duplicate, and forwarded to the Division of Requisition and Property Accountability as heretofore. One copy of Form No. 203, which has been acted upon, must accompany yearly Property Returns book when forwarded, and one copy shall be retained by the commanding officer.

SEC. 291. Requisitions for general supplies shall be forwarded on the first Monday in each quarter by all branches of the service, except the Division of Apparatus and the Marine Division. They shall forward such requisitions on the first day of each month.

SEC. 292. Where the bin capacity in quarters (other than those in the Marine Division) will permit the receipt of a yearly supply, requisitions for such shall be forwarded on March 1st for June 1st delivery. Where a yearly supply cannot be received, requisition shall be for bin capacity.

Additional requisitions, when necessary, shall be forwarded on the first of each month.

Requisitions shall show the size of coal required, bin capacity, average yearly consumption and quantity on hand.

SEC. 293. Fuel requisitions for the Marine Division shall be forwarded on the 25th of each month.

SEC. 294. All other requisitions (except those for gasoline) shall be forwarded on Monday only, unless the supplies or repairs are of a very urgent nature. Under no circumstances shall the Repair Shop be requested to furnish articles not officially requisitioned.

SEC. 295. Requisitions for gasoline shall be forwarded when the quantity on hand is 100 gallons; for lubricating oil, when the quantity is not less than 15 gallons. Kerosene and light lubricating oils shall be included in the quarterly requisitions.

### Uniforms

SEC. 296. Members when appointed in the Department (except those appointed provisionally and serving on probation) and members promoted shall equip themselves with proper uniform, according to these rules, within ten days after they report for duty.

SEC. 297. The uniform as prescribed shall be worn as follows:

On house watch, the uniform coat, trousers, shirt, fatigue cap, badge pinned on left breast. From June 1st to September 15th, a black shirt of light weight material, with a rolling collar, and with badge pinned on left breast, may be worn on house watch duty. Suspenders shall be worn under the shirt, when the coat is dispensed with.

At Roll Calls—The uniform coat of the season, trousers, shirt and fatigue cap.

On the tours of house watch duty between midnight and 6 a. m. The coat, coat badge, and cap shall be worn.

Outside of quarters—The fatigue cap, uniform coat, overcoat in cold weather, trousers and shirt; during snow or rainfalls, dark waterproof clothing may be worn over the uniform, leaving cap badge exposed.

On Theatre Detail Duty—The uniform coat, trousers, fatigue cap, shirt, badge pinned on left breast.

Coat badges shall be worn by members at roll calls, and when on house watch duty.

Theatre detail badges shall be worn while on duty in a place of public assembly.

The carrying of umbrellas, while in uniform is not approved.

SEC. 298. Uniform clothing of the type described below shall be worn during the periods named:

From April 15th to June 1st, and September 15th to November 1st—Cloth uniform coats, trousers and uniform caps.

From June 1st to September 15th—Flannel uniform coats, flannel or dark shirt, (white shirt—officers), cloth or flannel trousers, and summer caps.

From November 1st to April 15th—Overcoats, (with short coats for all officers), cloth trousers and uniform caps.

SEC. 299. When the uniform is worn it shall be in an unsoiled condition, pressed and completely buttoned. Shoes, buttons, badges and insignia shall be well polished. The cap shall be worn evenly. Hands must be kept from pockets. No buttons, badges or decorations shall be worn other than those permitted by the rules, or by order of the Fire Commissioner.

SEC. 300. The clothing described below shall be worn by all

(*Continued on page* 396)

# COURSE OF INSTRUCTION IN FIRE PROTECTION

## AS GIVEN AT THE UNIVERSITY OF ILLINOIS

### WATERWORKS AND PIPING

By CLARENCE GOLDSMITH
Assistant Chief Engineer, National Board of Fire Underwriters, Chicago, Ill.

*IN this thirty-third installment of the University of Illinois Course in Fire Prevention, Mr. Goldsmith gives some important hints as to the cooperation between the fire and water departments, and the maintenance of hydrants and valves:*

It is very important that the water superintendent cooperate with the fire department, and it is equally as important for the fire department to cooperate with the water department. If you don't, you are not going to get very far.

We have several types of water supply. We have the gravity supply and there are a few of those in the state of Illinois where the water is collected in storage at high elevation and delivered directly into the distribution system from those storage reservoirs without pumping. The whole northern part of the state and the major portion of the whole state is so flat that we have to pump the water. In many cases we have direct pumpage and in some we have combinations of the two. We have water stored on the surface, have small elevated tanks, but in most cases we are dependent for our fire supply on the capacity of the pumps.

#### Three Different Types of Fires

Our fires can roughly be divided into three stages, the fire which can be put out with the small chemicals, or perhaps, with the large chemicals; the next stage is the fire you cannot quite handle with that, which needs a dash of water from the shut-off line; then we have the fire in the third stage, which requires several large lines.

With the various systems of water supply we get our pressure to deliver the water through the distribution system so it will be available at the hydrants. In the smaller towns our pipe is small in size and the quantities of water we can get are relatively small.

#### Small Town Fires Relatively Harder Problem

Most any fire that has got control of a building needs two streams and as the size of the buildings and the value of the contents increase, we need more water until we get up to the large city block where we require a concentration of 12,000 gallons a minute. I am not going to deal much with that large city problem because those problems are, to my mind, relatively easier than the problems that the firemen in the small cities and towns have to deal with. They have got to utilize what they have and get the most out of it, both men and equipment, and I hope we shall be able to give you several valuable demonstrations of the utilization of comparatively weak water pressures, and be able to show you some fairly good streams.

#### Raising Pressure for Fires Not Good Policy

Most of our water systems are satisfied to maintain a domestic pressure of thirty-five to fifty pounds. In case of fire the pressure is frequently raised and you get your fire streams by directly connecting to the hydrant. In other cities where the pressure is not raised you are dependent on developing the fire stream from gasoline automobile pumpers. Perhaps, in the smaller city, it may still be economical to raise the fire pressure, but as the size of the city increases, I don't believe that can be borne out today as the most economical method, and surely not the most reliable method. If we are going to raise the pressure on the system, we encounter many difficulties, most of which we overcome, but once in a while we don't; for instance, if thirty-five pounds is carried and we want to increase the pressure to seventy-five pounds, it means the attendant must be prepared and present at the pumping station, and we must have some reliable way of receiving our alarm and transmitting it to the pumping station. If dependent on raising the pressure, and it is not raised, we cannot develop our fire streams. Raising pressure at the pumping station always involves having reserve equipment or power in some form or other.

#### Reliability of the Motor Pumper

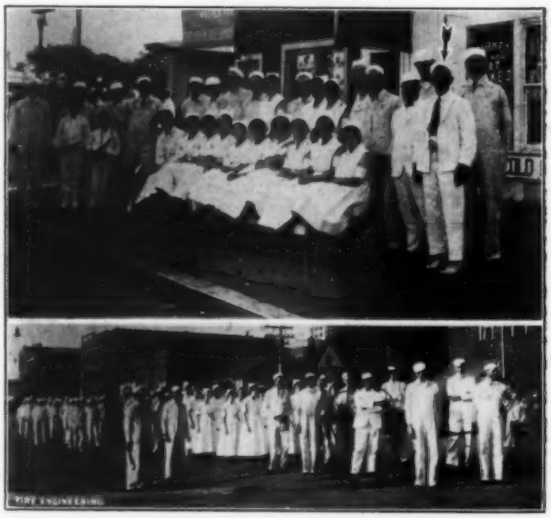
In some pumping stations we have centrifugal-motor-operated pumps designed to operate at thirty-five or forty pounds domestic pressure. If we want seventy or eighty pounds pressure we put another pump in series. If we have only two such pumps in our pumping station, and one of these is out of service, we can't raise the pressure. When we do raise the pressure, we stand a good chance of blowing out a pipe in the system and it may result in the complete failure of our supply. It means also that we will have a marked increase in the domestic consumption at the time we raise the pressure. If we raise the pressure from fifty to 100 pounds, we will be using half as much more water for domestic use, after we raise the pressure, as we were before, and if the supply is limited, or the size of the mains is limited, or the pumping capacity is limited, it means there will be not much water left for fighting a fire. When we realize that the motor pumper of today is a very reliable piece of apparatus, has an excellent service record over a period of years, and that we can develop any pressure we want to at any point we want to, why not get the motor pumper and be satisfied with the orginary normal domestic pressure from out water system?

*(To be Continued)*

## Hospital Has Efficient Fire Department

The South Carolina Hospital for the Insane at Columbia, S. C., is ably protected by a volunteer fire department composed of the male and female nurses. The frequent inspections conducted by the department has been the means of safeguarding the 3,600 inmates of the institution.

E. M. Dickert is chief of the hospital's volunteer fire department, and he is assisted in his work by Chief A. McC. Marsh of the Columbia fire department. Once a vear the Columbia fire department journeys to the hospital to supervise the drills and to give whatever assistance may be necessary to maintain the volunteer department at its greatest efficiency. Numerous drills are held in between times. The twelve female nurses are familiar with the use of the fire appliances and apparatus at the hospital.



**The Volunteer Fire Department at the Hospital for the Insane**

Upper—Some of the members of the hospital's fire force as they appeared in a Fire Prevention Parade. Chief Dickert is indicated by the arrow. Lower—The Institution's fire department as they appeared in the Fire Prevention Parade. The hand reel team at the right won a cup for the best time made by competing departments.

There were three small fires at the hospital during the past year but by the time that Chief Marsh responded with his apparatus the volunteer fire department had the fire under control.

A hand reel team from the state institution won a silver cup for making the best time in a district contest.

# WITH THE EDITOR

## The Standpipe in Skyscraper Construction

New problems in fire-fighting arise overnight. New methods to meet these altered conditions must be continually adopted.

The fire in the Hotel Netherlands tower, under construction, in New York on April 12 involves a comparatively new hazard and one which must be carefully considered from every standpoint by fire-fighters in large cities, as it is one which may confront them at any time.

Of course the ideal method of preventing such a blaze 30 stories and over above the street, would be to do away by law with the use of any kind of wooden scaffolding. But this would, no doubt, work a severe hardship upon the builder, as metal scaffolding of practical fabrication might be prohibitive in its cost.

However, if there had been water available within the structure to fight this fire in the beginning, it would not have reached the proportions that made it a menace to surrounding property and it could have been easily controlled.

The impossibility of getting streams upon the blaze, was what made it so hard to handle and rendered the fire department practically helpless to prevent its spread. The only thing left for the department to do was to guard surrounding property to the best of its ability from the showers of burning beams and boards and let the fire burn itself out.

While the law provides for the completion of the standpipe, floor by floor, in the construction of such high buildings, so as to provide water to fight just such a fire as occurred in the Netherlands, yet it is very apparent that this law was not properly enforced, in that the standpipe was apparently not capped. This was evident from the fact that water turned into it by the fire department simply poured out in a Niagara from the top of the standpipe, and rendered the efforts of the firemen of no avail, as they could obtain no streams to fight the blaze. If water had been available in the beginning of the fire the blaze would have been easily controlled.

Another very important element in the situation was the fact that the elevators were not running. This was said to be due to a labor union practice of removing the fuses of the elevator machinery at closing time. The consequence of this was that the firemen were compelled to toil up thirty-two stories, carrying heavy hose with them, in order to reach the fire.

There should be some provision made to avoid such an occurence as this and render the elevators accessible to the firemen. If the firemen are compelled to go through such a performance whenever a fire occurs in a skyscraper under construction after working hours, there will be little chance to extinguish the blaze, before it has, as in the present instance, proved a menace to surrounding property, and badly damaged the structure involved.

There is one fact that stands out distinctly in this affair, and this is that the New York Fire Department did everything that was humanly possible to stay the flames in the structure, and also well protected the surrounding property from the dangers of the falling embers which constantly menaced it. Those who saw the officers and men dodging the barrage of burning planks from the sky, as they went about their work, expressed admiration for their pluck and bravery. In other words, the department was severely tested in this emergency and made good.

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## Death in Speed Test

Two firemen of Verdun, a small city near Montreal, in the Province of Quebec, paid with their lives for a speed test which was being held by the fire department to reduce by a few seconds the time from the fire station to a given point. The apparatus, said to have been traveling over sixty miles an hour, struck an obstruction in the road, the driver lost control, and the pumper knocked down a small tree and a telegraph pole, finally colliding with a larger tree and throwing its crew to the street.

There can be no question but that high speed fire apparatus is essential and that the quicker the department arrives at a fire the better chance there is to minimize the damage, and rescue any human being that may be in peril from the flames. The first moments of a fire are, in most cases, the deciding factor as to whether it shall be an insignificant blaze or a fire involving great damage in property and perchance heavy loss of life. For this reason, high speed of apparatus is a very necessary requirement for efficient fire-fighting.

But there is a great distinction between high speed and reckless speed. There is little excuse for driving a fire engine through the public streets at a rate by which a slight obstruction in the roadbed will cause the driver to entirely lose control. Such speed defeats its own ends. For what is gained by the saving of a few seconds of time at the possible expense of the lives of firemen and the destruction of a valuable piece of fire apparatus?

There is also the delay in reaching the fire involved in such an accident to be considered. This may result in the increase of the small blaze into a bad fire and even a possible conflagration.

The small saving in time is surely not worth the risk to men and apparatus involved, not to speak of the danger to automobile and pedestrian traffic arising from such unreasonable speed.

High speed is an essential in fire-fighting; reckless speed is a detriment.

## Angle Parking and Rescue Work

Attention has been called to a phase of the parking problem by Chief Steinkelner, of Milwaukee, Wis., which has not received very much attention and which, it would seem, constitutes, under certain conditions, a very serious fire-fighting drawback. It is the practice of so-called angle parking of automobiles, whereby the car is permitted to be parked at a slant from the curb, instead of flush with it.

This practice, in streets where buildings of several stories in height are to be found, will seriously interfere with emergency rescue work at a fire, as the aerial truck must be placed at most 25 feet from the building in order to obtain the correct pitch of the ladders. The automobiles parked at an angle in front of a building on fire would preclude the aerial apparatus being used, as it would be impossible to approach near enough to the curb to effectively use the ladder.

Aside from this particular phase of the angle parking problem, there is also the congesting of space in which this plan results. With the cars extending out into the street, especially if it is a narrow thoroughfare, the available space for moving traffic will be greatly congested, and in the busy hours, there will be danger of jams and tangles of traffic, unless the situation is handled with great wisdom by the traffic policeman.

Angle parking, at best, is a poor substitute for the frequent parking space, and the latter provides a much better method of removing parked autos from being a menace to the fire department.

## Do You Know Chief J. E. Cueny?

Chief Hugo R. Delfs, Lansing, Mich., has found a gold badge in that city that is the property of Ex-chief Joseph E. Cueny.

Chief Delfs has made a search for Mr. Cueny, or for his heirs, in the event that the man is dead. He has made a search in Michigan and is of the opinion that Mr. Cueny is from another state. An announcement has been made through the radio station WREO but no replies were received. Should any of the readers of this journal know of Joseph E. Cueny or his family, Chief Delfs will greatly appreciate having this information.

**Clawson, Mich., Purchases Fire Apparatus**—Clawson, Mich., has purchased fire apparatus.

**Asbury Park, N. J., Receives Bids**—Asbury Park, N. J., received bids for two 1,000-gallon pumpers, and the Stutz Fire Engine Company submitted the lowest bid.

**International Falls Purchases Apparatus**—International Falls has purchased an apparatus equipped with two forty-gallon chemical tanks and with ladders.

**Lake Mohegan, N. Y., to Have New Fire Station**—Contracts have been let for the erection of a new fire station for Lake Mohegan, N. Y., department.

**Oakdale, Cal., May Purchase Apparatus**—The chamber of commerce of Oakdale, Cal., is planning the purchase of fire apparatus.

**London, Ont., Chief Retires**—Chief Aitken of London, Ont., Canada has retired after forty-six years service in the department. In addition to his regular pension, it was voted to pay him two years salary of $6,000.

## Bookings of "The Fire Brigade" Increase

Additional bookings of "The Fire Brigade," the motion picture sponsored by the International Association of Fire Chiefs, are being received daily. The following list contains the additional bookings that have been received since the publication of the lists in the previous issues of FIRE ENGINEERING.

Due to the large number of bookings that are being received for "The Fire Brigade," space does not permit a listing of all the theatres that have booked the motion picture. Instead a listing will be made of the first date at which "The Fire Brigade" is to be shown in a municipality.

| CITY | THEATRE | DATE |
|---|---|---|
| **Alabama** | | |
| Greenville | Opera House | June 16-17 |
| **Arkansas** | | |
| Gentry | Auditorium | May 9-10 |
| Stuttgart | Majestic | June 15-16 |
| **California** | | |
| Alvarado | Petersons | May 1 |
| Carson City | Grand | May 4-5 |
| Crockett | Loring | May 11-12 |
| Fort McDowell | Post Exchange | May 11 |
| Lakeport | Orpheum | May 10-11 |
| Lindsay | Glade | May 18-20 |
| Niles | Niles | May 1 |
| San Bruno | Novelty | May 4 |
| Sparks | Isis | May 1-2 |
| Vallejo | Vallejo | May 9-11 |
| **Colorado** | | |
| Craig | Victory | May 26-27 |
| Steamboat Springs | Alden | August 1-2 |
| **Connecticut** | | |
| Goodyear | Community Club | May 15-27 |
| **Idaho** | | |
| Idaho Falls | Rex | April 21-25 |
| **Illinois** | | |
| Bethany | Cozy | June 27-28 |
| Carlyle | Carlyle | August 8-9 |
| E. St. Louis | New American | July 3-4 |
| La Salle | Majestic | May 30-June 1 |
| Lovington | Photoplay | May 22-23 |
| St. Elmo | Gayety | June 20-21 |
| Upper Alton | Gem | July 12-14 |
| Woodriver | Kilkare | May 16-17 |
| **Indiana** | | |
| Clinton | Wabash | Sept. 24-25 |
| Jasonville | Crescent | May 25-26 |
| Monon | New Strand | May 18-19 |
| Monticello | Strand | May 22-23 |
| Newport | Hollys | May 22-23 |
| Portland | Princess | May 23-26 |
| Union City | Grand | May 29-31 |
| **Iowa** | | |
| Anthon | Opera House | July 6-7 |
| Denison | Opera House | June 24-25 |
| Ida Grove | King | June 28-30 |
| Sac City | Casino | June 20-21 |
| **Kentucky** | | |
| Falmouth | Duncan | June 17-18 |
| Franklin | Victor | August 1-2 |
| **Maine** | | |
| Old Orchard | Pier Casino | August 7 |
| **Maryland** | | |
| Darlington | Idle Hour | June 17-18 |
| Eastern | New | May 9-10 |
| Hampstead | Leister | June 10-11 |
| Lonaconing | Opera House | June 20-21 |
| Manchester | Manchester | June 8-9 |
| Midland | Opera House | June 13-14 |
| Mt. Airy | Rigler | June 17-18 |
| **Massachusetts** | | |
| Amherst | Town Hall | May 25-26 |
| Andover | Colonial | May 30-31 |
| Athol | Opera House | May 30-31 |
| Attleboro | Bates | June 6-8 |
| Beverly | Ware | May 26-28 (changed from May 30-June 1) |
| Bridgewater | Princess | May 16-18 |
| Brockton | Brockton | April 17-20 (changed from April 18-23) |
| Charlestown | Thompson Square | May 16-17 |
| Chelsea | Broadway | April 17-20 |
| Chicopee Falls | Royal | May 30-31 |
| Concord | American Legion | May 25 (changed from April 13) |
| Essex | Richardson Hall | June 16 |
| Gloucester | Strand | May 9-11 |
| Lynn | Olympia | April 17-20 (changed from April 24-30) |
| Malden | Strand | April 18-20 |
| Manchester | Horticultural | June 25 |
| Melrose | Melrose | May 12-14 |
| North Adams | Richmond | May 16-17 |
| Northampton | Plaza | May 19-21 |
| Roxbury | Criterion-Warrent | May 20-21 |

(*Continued on page* 399)

# QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

*"He that questioneth much shall learn much"*—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

## Weight of Water and Static Head

*To the Editor:*

Will you kindly answer through your valuable magazine the following questions, which were asked in an examination for lieutenant at Malden, Mass., recently.

1. What is the difference in the weight of the water in a 50 ft. length of 3-inch hose, and a 50 ft. length of 2½-inch hose?

2. How would you find the pressure in pounds per square inch due to head?

3. How would you find the height in feet of a standpipe where pressure per square inch is shown at the outlet?

Yours truly

W. S. D., Sommerville, Mass.

*Answer.* 1. The volume of water in a 50-foot section of 3-inch hose is found as follows: $3 \times 3 \times .7854 = 7.0686$ square inches cross section.

The length of 50 foot section in inches is 50 x 12 or 600 inches.

The cubic contents of a section of 3 inch hose is then 600 x 7.0686 or 4,241.16 cubic inches. There are 1,728 cubic inches in a cubic foot of water, and a cubic foot of water weighs 62.5. The total number of cubic feet of water in a section of 3 inch hose is $4,241.16 \div 1,728$ or 2.4544 cubic feet.

The weight of the water at 62.5 pounds per cubic foot is 153.4 pounds.

The weight of water in a section of 2½ inch hose is found the same way. $2\frac{1}{2} \times 2\frac{1}{2} \times .7854 = 4.90875$ square inches cross section. $4.90875 \times 600 = 2,945$ cubic inches approximately.

$2,945 \div 1,728$, and the quotient multiplied by $62.5 = 106.5$ pounds. Difference in weight is $153.4 - 106.5 = 46.9$ pounds.

*Answer 2.* The pressure per square inch due to a head of water is found by multiplying the head by .434.

For example, a 100 foot head of water gives 100 x .434 or 43.4 pounds.

*Answer 3.* If the pressure at the base of a standpipe is known, the height of water in the standpipe can be found by dividing the pressure by .434 or multiplying the pressure by 2.304. The height so found will be in feet.

## Preventing Water Damage

*To the Editor:*

I enjoyed your last number very much and particularly the Questions and Answers. But I am wondering if it is entirely impracticable for you to give reasons for answers as a rule. In the above department, with reference to treatment of straw packed glassware, etc., is it not true that damp or wet straw and excelsior "burns" glassware and china.

And with reference to bales of clothing, would not there be a danger of a Goerck Street occurrence by too free use of water on such bales?

The reason I raise these points is that as I read your answers, you indicate a regardless use of water in these instances.

Sincerely yours,

P. B.,
Nyack, N. Y.

*Answer:* If the fire is a small one such as to warrant discretion in the direction of the streams, the answer as given would hold. On the other hand, if the fire had gained considerable proportions, then it is a question primarily of extinguishing it. Rather than limit the use of water for fear the floor might be overloaded by the additional weight of water absorbed by the bales of rags, it would be better to protect the men by having them operate from ladders or from window sills. It would be bad practice to try and prevent the collapse of floors by limiting the use of water where such water was necessary to put out the fire.

As the question is worded, it is apparently inferred that discretion can be employed in the direction of the streams, for where materials of different types are on the same floor and it is possible to save some of them, your fire cannot be very far advanced.

As to damp straw "burning" glassware and china, this is probably correct. But if the fire is of such a nature that it does not permit the nicety of handling streams such as to prevent straw from becoming wetted where in the neighborhood of streams, or if the fire is far advanced and threatens to spread to the other floors or other parts of the warehouse, it would be false economy to attempt to save any material by limiting the distribution of the stream in the hope of saving some particular part of the goods on the fire floor.

## Solution of Puzzle

*To the Editor:*

We have a puzzle that has everyone in the Central Fire Station, Stamford, Conn., losing sleep over as to whether it can or cannot be done, as we can find no one who has ever done it.

The puzzle is as follows:

There are three houses in a direct line with each other. In front of each house there is a fire hydrant. The idea is to run one line of hose from each hydrant to each house, making a total of nine lines of hose. In doing this no lines are to cross one another or the puzzle is void. Also no line is to go through, under or over any house, nor any connections are to be used to accomplish the purpose.

If you could help us, and if so give a diagram of the layout in a future issue of FIRE ENGINEERING, your courtesy will indeed be appreciated.

Yours truly,

F. R. T.
Stamford, Conn.

*Answer:* This question is one which has gone the rounds several times in fire departments. It is impossible to stretch a line from each hydrant to each of the three houses without having at least one line cross over another. An alternative has been suggested of having one line cross over the top of a hydrant, but this seems to be out of line with the intent of the problem. Passing one line through a house, of course, will solve the problem but this is forbidden by the terms of the question.

## Igniting Fire Hose by Friction

*To the Editor:*

A question has arisen as to whether or not water can be passed from a fire engine through rubber lined hose with a pressure so great that the friction of the water will melt the rubber lining and scorch the jacket of the hose?

I have no knowledge of any such occurrence being on record, therefore a reply from you on the subject will be appreciated. Thanking you most kindly for the courtesy extended, I am,

Very truly yours,

B. J. G.
Newport News, Va.

*Answer:* It would not be possible to send water through fire hose with such velocity (which would necessitate a tremendous pressure) that the rubber lining would melt or that the jacket of the hose would be scorched.

Before the rubber lining of the hose would melt a temperature would have to be reached which is away above the vaporization point of water. In other words, the water would first have to be turned into steam and then superheated very much before the melting point of rubber would be reached.

You will appreciate that it would be impossible practically to send water so quickly through hose that it would be turned into steam and then subsequently superheated.

Water, in its initial form, would absorb the heat created by friction as fast as it is produced.

It would require a tremendous length of hose and tremendously high velocity to raise the temperature of the water to even the boiling point, 212 degrees Fahrenheit.

As to the friction scorching the jacket of the hose, this is entirely out of the question.

One incident where hose was set fire by water passing through it is on record. In this case the cause of the fire was not the

friction of the water. The theory advanced in this particular case was that the pulsation of pressure through the hose caused the jacket with its several layers to be so moved that one layer rubbing on the other created friction which started the fire.

## Ventilation at Acid Fire

*To the Editor:*

In the recent promotional examination held on February 24th last, by the San Francisco Civil Service Commission for the position of Captain in the San Francisco Fire Department, a question was asked that caused considerable argument and I am taking this liberty of writing you in order that your information may settle same.

The question was relative to a fire in a building in which is located an acid storage room in the basement containing sulphuric, muriatic and nitric acids, and the said acids being on fire. The question asked was of the proper method of ventilating the building—whether to start from the top and work down or to start from the bottom and work up. Also, if the fumes from the above acids are heavier or lighter than air and if they rise or lay low on the floor.

Thanking you in advance I beg to remain,

Respectfully yours,
E. J. F.
San Francisco, Calif.

*Answer:* Although gases which are ordinarily heavier than air would as a rule remain at the lowest point, this condition does not exist where fire is burning and where incidental drafts are created.

Let me make a comparison: At a large fire embers weighing appreciably more than air are carried upward with the heat and smoke. The embers may even be complete shingles.

No one can deny that such shingles would lay on the ground were it not for the draft created by the fire.

Exactly the same thing may be said of gases which are normally heavier than air.

Just as soon as fire gains headway and there is a draft upward, these gases, although being heavier than air, are carried upward by the draft. The process of ventilation at the fire you cite would be to open up at the top, first, and then provide openings afterward at the bottom. This would insure the gases being carried upward by the fire and remove a large percentage of them.

Of course, some of the fumes would remain around the lower points of the building, but this cannot be prevented.

When it comes to a decision as to which is the better method of ventilating, namely, opening up at the top of the building or at the bottom first, the upper ventilation should be selected.

On the other hand, if the fire is just smouldering and there is very little draft, then low ventilation should be performed first and upper ventilation second.

## Two Pumpers on 4-inch Main, Etc.

*To the Editor:*

Will you kindly answer the following questions for me?

Question 1. We have three salt water hydrants in different parts of the town which are connected to a 4-inch main, 200 feet long but no lift. Each hydrant has but one outlet and we have but one 300-gallon pump. If we put two outlets on each hydrant can we get sufficient water to feed two 300-gallon pumps?

Question 2. In our village is located a large privately owned car plant. They have sufficient water and apparatus to protect their own property and a large part of the village near them. But the plant is fenced in and is constantly under the care of a watchman and no one is allowed inside without a pass from the manager. Our village fire company is located on the other side of the canal (which separates this plant from the village) and is composed of two 25-gallon chemical tanks on a Ford truck, and which is not large enough to protect all of the property. The citizens are asking for a larger machine or a pumper and some have proposed that the new machine be placed inside the fence of the private company, access to which is barred by a guarded gateway and a pass required for entrance. Would it not be better to have the new machine or pumper outside the private plant, where it will be accessible to any of the volunteer firemen at any time?

Your early reply will be much appreciated.

Sincerely yours,
P. H.

*Answer* 1: With reference to question No. 1, you do not state how the hydrants are supplied—whether they are supplied under pressure or whether the water is merely fed into the system which is kept charged and you have to take the water by suction from the hydrant. If the first is the case, then before the question can be answered satisfactorily it will be necessary to know what pressure you have on your hydrant.

In considering this question the following facts are set forth: Assuming you have two 300-gallon pumps with a total capacity of 600 gallons, you cannot successfully lift water greater than 15 feet with a four-inch pipe, nor overcome an equivalent friction loss.

The friction loss in cast iron pipe, four inches in diameter, and in fairly good state of preservation is about 130 pounds per 1,000 feet. In order to supply the two engines at a hydrant you must maintain at the hydrant in the neighborhood of five pounds at all times. This pressure cannot drop when the flow of 600 gallons per minute is being taken from the hydrant, otherwise you would have your engine operating at suction. If the engine operated at suction it could not lift water a greater height than 15 feet (representing a negative pressure of approximately 6½ pounds).

Assuming that the length of the main supplying the hydrant is such that the pressure drops down below zero at the hydrant and you are taking water by suction. If a negative head greater than the 6½ pounds is created, you are not going to get the full capacity of your pumper.

As a second assumption assume that the mains are supplied by water but at practically no head. Then just as soon as the water begins to flow, a negative head is created at the hydrant depending upon the length of the pipe.

With a flow of 600 gallons per minute, this negative head would amount to approximately 6½ pounds for every 50 feet of 4-inch pipe through which you are drawing water. You can from this figure determine just how far you could draw water under the conditions encountered.

If you will give further data on how the hydrants are supplied—whether by pump or gravity and the pressure you have at your pump or point where the water enters the system as well as the length of pipe lines from the source of supply to the various hydrants, more specific data can be given you.

*Answer 2:* On the basis of the data you give, it would be very unwise to place your engine within the fence of the plant to which you refer. Practically the whole advantage in having a fire department is in getting to the fire while it is still small. If there is a delay in getting the truck out from the plant you are losing the most valuable advantage of motor apparatus over the horse-drawn, namely, speed.

Unless there is some other factor which you have not mentioned and which bears greater weight than having the pumper available at all times, it would indeed be unwise to place the machine at a point where it would not be instantly available to the members of your department.

## Placing Engines in Relay

*To the Editor:*

Your answer to the following question will be greatly appreciated: Having one hundred lengths of 2½ inch hose (50 feet each) coupled together making a stretch of 5,000 feet, with playpipe equipped with 1⅛ inch tip, you have at your disposal one six-cylinder 750 gallon pumper and one six-cylinder 1,000 gallon pumper. First pump to be placed at draft. Which pump should be placed at draft and what position in above given stretch of line should second pump be placed and why?

Very truly yours,
B. J. G.,
East Boston, Mass.

*Answer:* The proper method of placing the engines would be to place the 1,000 gallon pumper at draft (assuming it takes its supply from a source where it has to lift the water to the pump).

The location of the second engine is determined by the rule given on page 142 of Simplified Fire Department Hydraulics and which is as follows: Where an engine is operating at a pump pressure of 250 lbs. or thereabouts, the length of the line from the second engine to the nozzle should be four-fifths the length of the line from the first to second engine.

In this case it will be necessary to operate the pumps at around 250 pounds pressure because of the long stretch. Hence this particular rule would apply.

On the basis of this rule the second engine should be placed at a point 2,200 feet from the nozzle and 2,750 feet from the first engine. In actual calculations the distance from the second engine to the nozzle would solve out to be 2,200 feet, but as there is no section of hose 20 feet long given in the problem, it would be necessary to take 2,200 feet even.

**Hollywood, Fla., to Erect New Station**—Contracts have been let in Hollywood, Fla., to erect a new fire station to replace the one that was destroyed by a hurricane last September.

## CLEANING FLUID IN FUR STORE EXPLODES, CAUSING BAD FIRE

**Theatre Block in Kenmore, Suburb of Buffalo, N. Y., Badly Damaged—Buffalo Pumper Keeps Up Pressure in Kenmore Mains**

The explosion of some cleaning fluid caused a bad fire in the Kenmore Theatre Block, Kenmore, N. Y., near Buffalo, with a loss estimated at $125,000, early in the morning of February 25. Firemen of Buffalo and Ellwood assisted the local department in bringing the flames under control.

A passing policeman heard an explosion about 2 o'clock in the

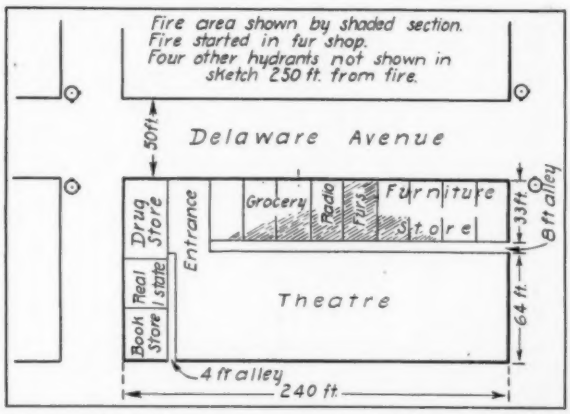
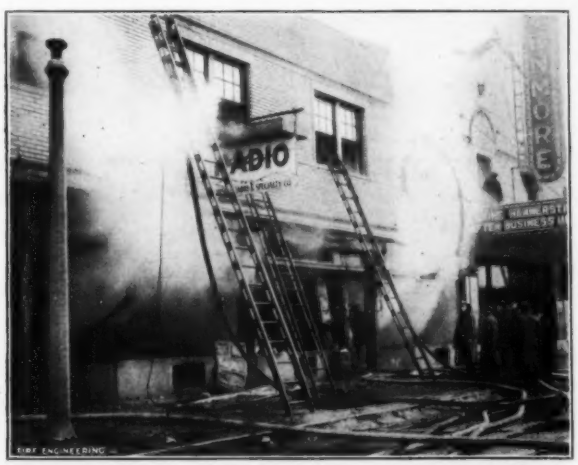



**Diagram of the Kenmore Fire as Sketched by Chief Hedden**

morning, and found the Lavene Fur Company's establishment in flames. The Kenmore fire department was quickly on the scene, but on account of the heavy smoke were unable to enter the building. For a time they were enabled to confine the flames to the basement of the fur company, where the explosion occurred, but about 4 o'clock the fire extended to the upper floors of the two story structure and spread so rapidly that a hurry call was sent to Buffalo and Ellwood for assistance. Chief Hedden, of Buffalo, sent four companies of which he took command in person. Several business houses occupying the




**Scene After Fire in Kenmore, N. Y., Theatre Block was Under Control**

block, including a radio store, market, bowling alley, furniture store and several offices, were badly damaged. The Kenmore Theatre, however, owing to its fireproof construction, was untouched by the flames.

Chief Heddon of Buffalo who assisted in fighting the fire said that it was one of the most stubborn fires that he ever fought. The fire was apparently out at three different times, and each time it broke out with more vigor.

The apparatus response was as follows: Kenmore, two pumpers and one ladder truck; Buffalo, three pumpers and two ladder trucks; Kenilworth, one pumper which moved into the Kenmore station in the event of another fire; Ellwood, one pumper which was not used. All the firemen, however, that responded with the apparatus, found plenty of work to do.

The unusual draft upon the Kenmore mains caused by the pumpers in operation caused a shortage of water, and Chief Hedden ordered Engine 26, a pumper, to return to the Buffalo city line and pump water into the mains of the smaller town. This was kept up for four hours, while the fire engines were in operation.

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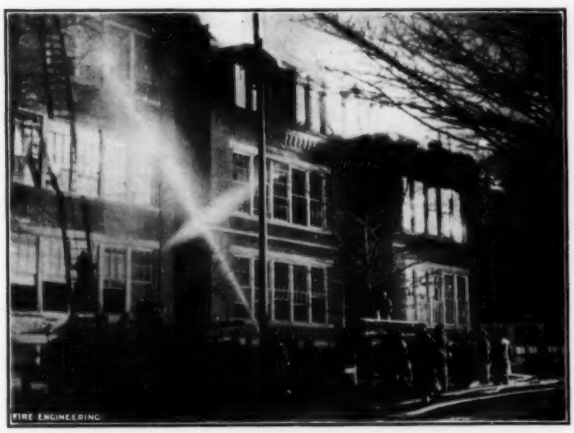
## OLD HIGH SCHOOL DESTROYED BY GENERAL ALARM FIRE IN LYNN, MASS.

**Embers Carried Far by Strong Easterly Wind—Aid Rushed from Nearby Cities—School Destroyed by Similar Fire Years Ago**

FIRE, of general alarm size, destroyed the Central High School, an old three-story brick structure built in 1872 in Lynn, Mass. The blaze started shortly after midnight, and the top floor of a new brick addition was damaged when a section of the roof crashed in and carried debris and flames beyond the fire walls separating the two sections.

The first alarm was sounded at 12:17 A.M., March 24, and was quickly followed by second, and general alarms. Aid was sent from Swampscott, Salem, Peabody, Wakefield and Marblehead.

Chief Edward Chase, who directed department operations, declared that the fire apparently originated in a supply room




**Fighting the Lynn Junior High School Fire**

on the first floor and obtained great headway before it was discovered.

Lines of hose were taken to points of vantage on the roofs of several portable school houses and to the rear of the Lynn Classical High School which is separated by a narrow alley from the burned structure. Three wagon guns were used, one in the front, one on the side, and one in the rear. Lines were also taken over stairways in the new addition, to the roof of the addition, and over an extension ladder from which a stream was directed into the top floor.

Eleven small fires, including five roof fires, were started by flying embers which were carried some distance by a strong easterly wind. These fires were extinguished before much damage resulted. A large crowd was attracted to the scene and police reserves were called out to maintain fire lines.

Damage was estimated at $200,000. The fire recalled a similar one that destroyed the Lynn English High School a few years ago.

Box 55 in the school was sounded when the fire burned through the wires of the auxiliary system, caused a short circuit, tripped the relay, and recorded the alarm in headquarters.

The response to this first alarm included two Ahrens-Fox pumpers, two aerial ladder trucks, two chemical companies, district chief, and deputy chief. Deputy Chief William F. Welch ordered an additional alarm. This acted as a second alarm and brought Chief Edward Chase, a tractor drawn Amoskeag steam fire engine, American-LaFrance pumper, Ahrens-Fox aerial ladder, and district chief. A general alarm was then sounded bringing to the scene three tractor drawn steam fire engines and hose wagons, American-LaFrance motor pumper, Ahrens-Fox aerial ladder truck, three chemical companies, and the off platoon of the department including two district chiefs.

Companies from Salem and Swampscott went into service, the other out of town companies covering in at the vacant fire houses. The hydrant pressure averaged sixty pounds and pressure at the pumpers from 130 to 200 pounds. The nozzles ranged from 1¼-inch on mobile lines to 1¾-inch tips on wagon guns. A cellar pipe was operated into a cock loft from the roof of the addition. Lines were played through openings in the fire wall from the new addition and the flames kept out until the roof and top of the fire wall collapsed letting the fire in to the top story. Approximately 8,000 feet of 2½-inch cotton rubber lined fire hose was used. There was insurance of $166,000 on the building and $19,000 on the contents. For a time the Classical High School Public Library, and other nearby buildings were endangered by the flames and sparks.

HARRY BELKNAP.

## FIRE DESTROYS WHOLE BLOCK IN RESIDENCE AND TRADE DISTRICT

### St. Paul has Four Alarm Blaze in Semi-Industrial Section—Frame Structures

A FOUR alarm fire in the semi-business and residence section of St. Paul, Minn., recently, gave the department, under Chief Owen C. Dunn, a hard task, which was complicated by the fact that there was a row of frame dwellings directly opposite the building involved, which required great exertions and skill to save from igniting due to the intense heat of the fire.

Chief Owen C. Dunn, St. Paul, Minn.

The first alarm was received at 5:47 p. m. and on Chief Dunn's arrival he sent in three others in quick succession, bringing six Ahrens-Fox pumpers; one American-LaFrance and one Seagrave pumpers; two Pierce-Arrow squad wagons; two Ahrens-Fox and one Waterous steamers; one American-LaFrance aerial and two Seagrave city service trucks. Besides the chief there were in service one assistant and one district chief, with 101 men. Ten 6-inch hydrants—two double—were available, one of which was 12 feet from the fire, one 70 feet and the balance from 700 to 1,200 feet.

Sixteen engine streams were thrown, the hydrant pressure being 60 pounds. Of the 11,650 feet of hose laid, three lengths were burned and four burst. A turret pipe was also brought into requisition in fighting the blaze.

The fire broke out in the center of the United States Bedding Company's plant, caused, it was thought, by a hot box in a cotton carding machine, and spread rapidly through the inflammable materials in the plant. The fire spread to the plant of the Northwood Sounding Board Company, which was also badly damaged. A high wind was blowing, and the fire department was kept busy extinguishing the small fires caused by flying sparks falling on inflammable roofs. A church four blocks from the fire was ignited by sparks but the damage was slight, owing to the prompt work of the fire department.

The total damage from the fire was estimated at from $500,000 to $750,000.

**Likes Fire Engines, So Turns in Alarms**—A boy five years old was brought before the court in New York city charged with turning in a false alarm. The youngster pleaded that he liked fire engines, and he climbed a fence erected by contractors working on the subway excavations and turned in an alarm. When he attempted to turn in a second alarm, a policeman saw him climbing down from the fence and he arrested him.

## WHAT'S BURNING

**THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.**

### Week Ending April 8

| | |
|---|---|
| RIO VISTA, CALIF.—Beverly Gibson Bldg. damaged | 25 |
| ATTLEBORO, MASS.—C. L Watson residence damaged | 25 |
| JACKSON, MICH.—Michigan Seating Co. warehouse | 125 |
| BROOKHAVEN, MISS.—A. E. Moreton property and adj. bldgs. | 50 |
| CANANDAIGUA, N. Y.—A. Leschorn residence | 25 |
| QUITMAN, GA.—Brouch Variety Works damaged | 80 |
| BAYONNE, N. J.—Bldg. 798 Broadway damaged | 40 |
| BECKLEY, W. VA.—Portion of Crouch Lumber Co. | 40 |
| PORT CHESTER, N. Y.—Shop of Wm. Wolff & adj. establishments | 45 |
| LANSING, MICH.—Bldg. of Michigan Beverage Co. | 65 |
| COLUMBUS, GA.—Loewenherz Bros. store damaged | 65 |
| MONMOUTH, ILL.—Swift & Co. packing plant | 25 |
| NORT NUEF, QUE.—Catholic Church damaged | 80 |
| PHILADELPHIA, PA.—Garage of H. Brown & Sons destroyed | 35 |
| MARION, ILL.—Davis Bros. garage destroyed | 325 |
| KEARNY, N. J.—Property of Theobold Degreasing Co. | 80 |
| HIGH POINT, N. C.—Pickett Tobacco warehouse | 25 |
| GLEN COVE, N. Y.—Cloak factory, stores and apartments | 165 |
| ANDERSON, S. C.—Gluck cotton mill destroyed | 25 |
| WARREN, ARK.—Warren Bank Bldg. damaged | 40 |
| DULUTH, MINN.—Duluth Electrical Supply Co. block | 210 |
| PORTLAND, ORE.—Plant of Bushong & Co. damaged | 170 |
| CLEVELAND, O.—Plant of Ohio Bronze Powder Co | 80 |
| LANCASTER, PA.—Red Rose Candy Factory destroyed | 60 |
| SCRANTON, PA.—Colliery of Fair Coal Co. damaged | 50 |
| SALT LAKE CITY, UTAH—L. D. S. Chapel, 8th St. | 35 |
| OAKDALE, L. I., N. Y.—Property of J. P. Day Corp | 65 |
| CANANDAIGUA, N. Y.—Bldg. of Lynch Fuller Corp. | 40 |
| OCONOMOWOC, WISC.—Draper Hall destroyed | 40 |
| CHICAGO, ILL.—Fulton Street M. E. Church destroyed | 180 |
| URBANA, ILL.—Illinois Theatre destroyed | 35 |
| MEDFORD, MASS.—Warehouse of Adler Brothers | 25 |
| WESTFIELD, N. J.—Two business establishments | 35 |
| EVANSVILLE, IND.—Plant of Graham Glass Co. damaged | 80 |
| APPOMATTOX, VA.—H. M. Burge bldg. damaged | 40 |
| OTTAWA, ONT.—Dover Mfg. Co. Ltd., damaged | 40 |
| CHICAGO, ILL.—Englewood Assn. K. of C. Club | 40 |
| JACKSONVILLE, FLA.—Palmetto Follies road house destroyed | 50 |
| CHICAGO, ILL.—Stock of Molkov Lumber Co. | 45 |
| PITTSTON, PA.—North Main St. Apt. and business bldg. | 45 |
| FLORENCE, ALA.—Cunningham Drug & Jewelry Co. | 25 |
| ST. LOUIS, MO.—Warehouse of St. Louis Moving & Storage Co. | 70 |
| NORWICH, N. Y.—Warehouse, W. H. Dunne Co. destroyed | 45 |
| SILVER CREEK, N. Y.—Montgomery bldg. damaged | 30 |
| GLENMARY, TENN.—Mill of American Hardwood Co. | 250 |
| DeKALB, MISS.—Cochran Planing Mill damaged | 25 |

### Week Ending April 15

| | |
|---|---|
| FIVE POINTS, ARIZ.—Business establishments damaged | 25 |
| SPRINGFIELD, MO.—Two stores destroyed, one damaged | 180 |
| DODGE, N. C.—Seven buildings destroyed | 70 |
| CORINTH, MISS.—Corinth Hotel destroyed | 35 |
| PARA, ILL.—Dwelling of Mrs. Wm. Klein destroyed | 25 |
| KANSAS CITY, MO.—Mill of Southard Feed Co. | 125 |
| NEWARK, N. J.—Forest Hill Hospital damaged | 30 |
| BIRMINGHAM, ALA.—Liberty Overall Co., damaged | 50 |
| ELDORADO, ILL.—Casino Theatre destroyed | 40 |
| PARIS, KY.—Leader Dept. store damaged | 40 |
| MARION, ILL.—Davis Brothers Garage destroyed | 175 |
| CLEVELAND, O.—Bond Clothing Co., Hickox Bldg. | 35 |
| WURTSBORO, N. Y.—Wurtsboro Lodge destroyed | 50 |
| WILLIMANTIC, CONN.—Central Bldg. Union & Center Sts. | 40 |
| FALL RIVER, MASS.—Technical High School destroyed | 600 |
| ASHDOWN, ARK.—Mealroom, Temple Cotton Oil Co. | 30 |

*Courtesy, St. Paul Dispatch*

View of Fire Which Swept an Entire Block in St. Paul's Industrial District.

BOURBON, MISS.—Plant of Bourbon Gin Co. destroyed..... 25
HOLLY HILL, S. C.—Warehouse of Way & Jeffers..... 25
GAFFNEY, S. C.—West wing Gaffney High School..... 65
ABBOTSFORD, B. C.—Abbotsford Hotel and business block.... 170
EMERYVILLE, CALIF.—New Metal Products Co. destroyed.... 60
RARITAN, N. J.—Plant of Seaboard Refractories..... 170
PHILLIPSBURG, N. J.—Home of Mrs. J. S. Stewart..... 30
ALTOONA, PA.—Former Aldine Hotel Bldg. destroyed..... 25
VALLEY FORGE, PA.—Property on estate of Mrs. S. Zulich.. 100
SAGINAW, MICH.—Cooney & Smith Furniture Store..... 25
KEYTESVILLE, MO.—Five business bldgs. destroyed..... 50
PATERSON, N. J.—Miesch Mill damaged ..... 40
BOSTON, MASS.—Business block, Allston district..... 80
CHICAGO, ILL.—Elsworth Mills residence, Highand Park.... 25
LAKE VILLAGE, ARK.—Epstein warehouse destroyed..... 25
SPRINGFIELD, ILL.—Plant of Elevator Milling Co..... 325
ALLSTON, MASS.—Prindiville Block damaged..... 80
NAUGATUCK, CONN.—Naugatuck Chemical Co., U. S. Rubber Co. ..... 65
CHILOQUIN, OREG.—Girls dormitory, Klamath Agency..... 40
WEAVERTOWN, PA.—Plant of Weaver Bologna Co..... 25
CHICAGO, ILL.—Shoreland Garage destroyed..... 170
SOUTH PARIS, ME.—Bldgs. in business district..... 40
FAR ROCKAWAY, N. Y.—Business establishments, Mott Ave. 80
CANTON, O.—Berger Mfg. Co., damaged..... 425
OTTAWA, ONT.—Legare Automobile & Supply Co..... 30
HAMPTON BAYS, L. I., N. Y.—The Shinnecock Casino destroyed 40
TACCOA, GA.—Residence of Dr. Davis..... 40
EFFINGHAM, ILL.—Several business establishments..... 80
ST. PAUL, MINN.—Warehouse, Twin City Pipe Covering Co.. 80
CAMDEN, N. J.—Plant of B. F. Sturtevant Co. destroyed.... 210
ST. PAUL, MINN.—Main bldg., Ramsey Co. Preventorium.... 25
PHILADELPHIA, PA.—Factory, American Upholstering Co.... 65
OKOLONA, MISS.—Hotel Harriett destroyed..... 25
LYNCHBURG, VA.—Bldgs. of Virginia Epileptic Colony..... 50
SAN FRANCISCO, CAL.—Islais Creek Grain Trml. (state owned) 400
ROCK ISLAND, ILL.—Brake Shoe & Foundry Co..... 80
CARLSBAD, CAL.—Three business bldgs. destroyed..... 40
DALHART, TEX.—Prop. of General Eng. & Management Co.. 60
SANTA FE, O.—Gutman Grain Co. granary at Gutman..... 40
OAKWOOD, O.—Residence of J. W. Rice damaged..... 80
PLYMOUTH, PA.—Property of James Porach..... 50
READING, PA.—Business establishment of Pettinger Bros.... 25
MORGANTOWN, W. VA.—Entire business block destroyed....1000
EVERETT, MASS.—Property at 409 Ferry St. and 6 Shute St. 25
BIG RAPIDS, MICH.—Furniture plant of J. Martz & Sons..... 65
SYDNEY, N. S.—W. H. Mason business block..... 35
GREENVILLE, N. C.—Greenville Intermediate School bldg.... 65
PARMELIA, N. Y.—Mill, International Paper Co..... 125
KINGSPORT, TENN.—Warehouse, Mead Fiber Co..... 40
SPRINGFIELD, MO.—Hurlburt Kodak Co. and adj. property. 100
WASHINGTON, D. C.—Lumber yard, Thomas H. Shryock Co.. 40
WATERVILLE, ME.—S. Wein's store and adj. property..... 40

## GOVERNOR UPHOLDS GAS CUT-OFF LAW SUPPORTED BY NEW YORK CITY

### Associations Representing Owners of Old Type Buildings Against Measure—Chief Kenlon Speaks for Ordinance

By WM. JEROME DALY

ANOTHER attempt to nullify the City ordinance which requires certain types of buildings in New York City to be equipped with combination automatic and manual cut-off devices on gas supply services has failed.

Gov. Alfred E. Smith, after listening to heated argument presented by those for and those against repealing the gas cut-off law, vetoed a bill which had been passed and sent to him by the legislature.

The bill had for its purpose the allocation from the municipal authorities to the state Public Service Commission, of the power and responsibility to order and enforce the installation of such gas cut-off devices. The bill further provided that in any event the installation charges for such gas cut-off devices shall not be paid for by the property owner affected. The bill did not specify who shall pay for the installation.

Gov. Smith in vetoing the bill stated that those who sought to repeal the law or change its jurisdiction, ought to seek the remedy at the hands of the agency which enacted the law—namely, the Board of Aldermen of the City of New York. Moreover, the Governor declared, the repeal or modification of the law was opposed by the State Industrial Commission which complained that if the new bill were signed by the Governor, its effect would be to seriously interfere with numerous powers and duties now vested in the commission.

The gas cut-off ordinance was passed over three years ago by the Board of Aldermen, after a bitter and acrimonious scrimmage between the realty interests of the city and the officials of the New York Fire Department, the Tenement House Department and Building Department. It has been a bone of contention ever since and has been dragged in and out of the courts of the state, each time however victoriously for the municipal authorities; the Court in each case upheld the right of the City to enact such a measure for the protection of life and property in case of fire.

The fire insurance interests backed the measure to the extent that they allowed a reduction of one percent on premiums in premises where the cut-off device was installed. This of itself made the cut-off contrivance a money saver, in that the cost of the equipment and its installation was amortized within a few years at least and from that time on, the saving on the fire insurance premiums was velvet.

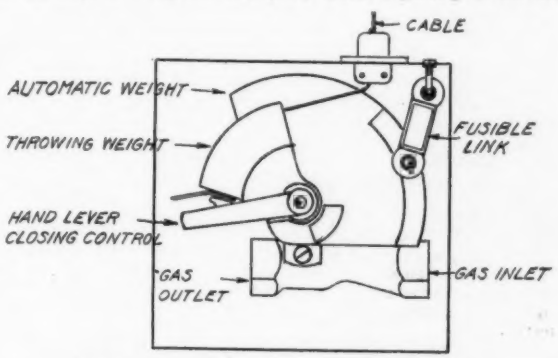
The realty associations opposed it nonetheless and publicly proclaimed that the gas companies should be required to install the device. The gas corporations fought that argument successfully.

At a public hearing in the City Hall, Chief John Kenlon championed the device and cited instances of firemen falling in the line of duty from illuminating gas fumes, due to melted gas meters or broken gas pipes, especially in the cellars of buildings afire. He was seconded by many chief officers of the New York department.

The real estate organizations shouted "graft" and "politics" and declared that the owners of property in New York were about to be milked for $40,000,000—the cost of the total proposed installations—while approximately $25,000,000 of that amount "was to go to someone higher up."

Chief Kenlon then charged the real estate folks with stacking dollars against firemen's lives. This of course they denied, and again added—"the device can be installed for a few dollars each, but we have to pay hundreds." The realty men then charged that somebody had a monopoly on the particular types of gas cut-off device approved by the Board of Standards & Appeals. The Board retorted that five such devices were on the approved list of gas cut-off types, therefore, competition was keen, the board said.

Then the gas companies, feeling themselves pinched between those for and those against the cut-off valve, started to respond to every first alarm fire in the commercial and residential parts of the city, in a big red emergency truck, reporting to the fire




**Sketch of Interior of Gas Cut-Off Mechanism**

The lever that shuts off the gas supply may be operated by means of a cable attached to a control lever on the outside of the building at the street level, by means of the hand lever or it may be operated automatically when the link fuses.

officer in charge and asking—'Want the gas cut-off, Chief?' The cut-off in that case being the depressed valve box either in the sidewalk at the curb line or sometimes in the highway immediately outside the curb. These gas valves have been in general use in New York for a great many years, and were installed by the gas companies. They are manual, but of these, Chief Kenlon said 'They are covered over with asphalt and in the winter they are covered with ice and snow—we can't reach them when we need them to shut off the gas."

While all this contention has been going on, the newer buildings being erected in recent years have generally provided for the gas cut-off valve in the specifications. The banks, the theatres, the telephone central buildings and the better type of business structures and commercial institutions, as well as hospitals, asylums, etc. have generally been complying with the gas cut-off law. Most of the opposition to the law comes from realty associations whose members own tenement houses or business buildings not of recent construction.

The refusal of the Governor to interfere with a strictly local or municipal matter, has inspired the Fire Department officials to continue the campaign of requiring property owners to provide a gas cut-off valve on each service pipe entering a building. Tenement houses are not required to have such a device, if there are no stores on the ground floor of the building. Presence of stores in a building otherwise tenanted by dwellers, requires a gas cut-off valve.

The valve is a dual affair. It is both manual and automatic and can be adjusted to any temperature. Keys to the manual tripper which shuts off the gas are similar to those carried by all officers of the Fire Department for sending special signals over fire alarm telegraph signal boxes. The automatic features of the valve are centered inside the front wall of the building, where a fire in the cellar would cause the valve to function. The manual device is on the front wall of the building.

## Oil Burners—Construction and Operation

(*Continued from page 376*)

saturated with oil and ignited by a torch. The plate must be heated to a temperature sufficient to vaporize the oil falling upon it. The heat of combustion is supposed to do this once the flame is started. The temperature of the house is maintained at a desired point by increasing or decreasing the intensity of the flame by means of a valve in the oil line, or the burner may be operated at a fixed intensity and then completely shut off as the conditions may demand. Whenever the burner is off for a few minutes the hot plate must be preheated again before the oil can again be vaporized and ignited.

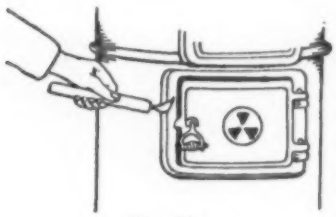


Fig. 13

Test for leakage of gases of combustion to room.

In some automatically-controlled vaporizing burners a gas flame is used for heating the hot plate and as a pilot light for igniting the fuel. This is shown in Figs. 6 and 7. The gas flame burns continuously and keeps the hot plate at such a temperature as to cause the oil to vaporize when it is admitted to the apex of the plate and trickles down over the corrugations shown. At the same time the pilot flame licks through holes drilled in the hot plate and ignites the mixture of vaporized oil and air. The automatic device in this case merely shuts off or opens a valve in the oil line to the burner.

With the atomizing type of burner it is necessary to introduce a flame or electric arc within a region which is filled with an intimate mixture of oil and air in such proportions as to make it comparatively easy to ignite. Ignition methods used may be roughly classified as gas, electric, electric gas, or electric oil. With a gas pilot, ordinary illuminating gas is used to provide a continuous source of heat and is so placed as most effectively to bring the mixture of oil and air to such a temperature as to cause combustion. The pilot flame is sometimes caused to expand at the time the burner "comes on" and by this means the danger of extinguishing the pilot light is somewhat lessened and ignition is presumably hastened.

In the case of electric ignition, a spark is introduced into the region of the charge. Electric-spark machines are either continuous or intermittent. In the continuous-spark type the spark continues during the entire time the burner is in operation. In the intermittent type the spark is active only during the time necessary to ignite the charge, and then ceases.

In the electric-gas type a gas pilot is turned on, the gas being ignited by a spark. The pilot light then ignites the charge. Still another device is the electric-oil ignition in which an independent atomized mixture is ignited by an electric arc and is utilized as a source of heat energy to ignite the charge of the burner proper.

### Automatic Devices for Control of Oil Burners

The oil flame is extremely rapid in heating and if not controlled in some manner will build up temperatures and pressures in the heating system which may prove dangerous. If the drafts of a coal furnace are inadvertently left open the worst that can happen is to burn up the coal then in the furnace. It is true that temporary overheating or increase in pressures might occur but in all probability no serious effects would be produced. With the oil burner, however, overheating would go on as long as the oil supply lasted.

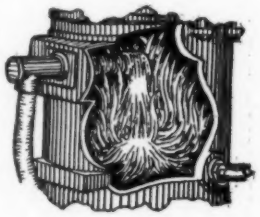


Fig. 16

Type of burner in which the burning mixture is projected downward against a refractory bed and then up along the direct heating surface. The objective is to gain a long flame travel before impingement on cold surface is suffered.

The simple gravity-feed vaporizing type is generally manually controlled, and in order to maintain the desired room temperature the fuel admission is regulated by hand—at best an irksome job. When the house is deserted the fire is either extinguished or cut down so as to maintain a minimum temperature sufficient, at least, to prevent freeze-ups. Very frequently burners of this type operate unsatisfactorily when throttled so that it is safer to entirely cut off the flame. This, of course, introduces the danger of freeze-ups and accompanying damage. In some instances automatic control has been applied to the gravity-feed type of burner, and either the oil flame is increased and decreased as required, or the burner is rendered entirely inactive when the room temperature rises above a desired point. The power-atomizing type of burner best lends itself to a variety of automatic controls, and it is in this type that such controls have been most successfully utilized.

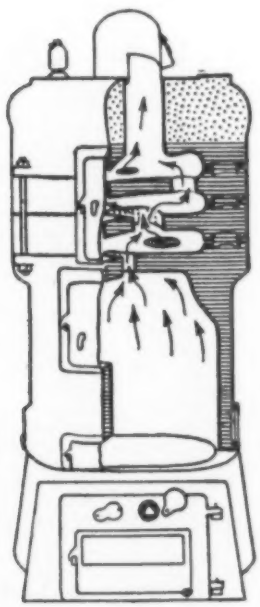


Fig. 14

Sectional view of round heating boiler, illustrating addition of sections to increase heating capacity.

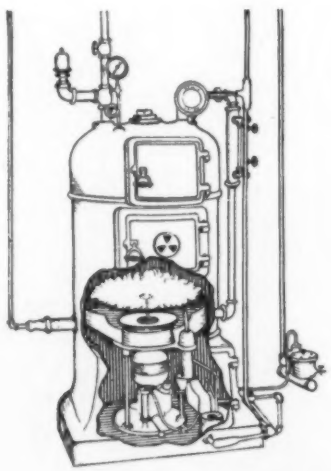


Fig. 12

Atomizing burner of the type which is practically entirely inside the furnace. Note the vertical motor which by means of a suction pump draws oil and air from a mixing chamber and discharges it into the combustion chamber through a hollow armature shaft.

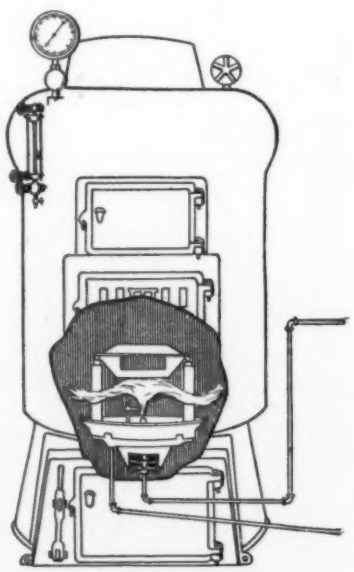


Fig. 15

Type in which the burning gases are directed vertically upward against a refractory target.

It is essential that precaution be taken to cut off the burner in the event that ignition fails to take place. In such burners as permit, a drip bucket or sump is provided to catch the unburned fuel which flows to it when ignition fails. This device trips when a certain quantity has been delivered to it and either cuts off the oil supply or breaks the power circuit, in either case rendering the burner inoperative as to the generation of heat and flow of oil. The machine must then be reset by hand before operation can be resumed. One of the chief objections to this control is the clogging of the line which delivers the unburned oil to the drip bucket or sump, owing to the accumulation of soot, scale, etc. Liberal passages offset this tendency to a great extent.

Another emergency control is designed on the assumption that so long as the pilot light burns the charge will be ignited and accordingly a thermostatic member which is exposed to the heat of the pilot light breaks the power circuit when the pilot light is extinguished.

When the general design of the burner is such as to make the catching of unburned oil and its subsequent delivery to a sump or drip bucket impracticable, the "stack control" is utilized. A thermostatic member is placed in the stack and if, after a predetermined period, it does not become heated—indicating that the burner has failed to function—the thermostatic member breaks the power circuit and stops the motor and supply of oil.

Low-water emergency controls are also applied in some installations and there are other devices, such as alarm bells, which are employed in conjunction with these emergency controls. Doubtless even more ingenuity will be manifested in this direction as design progresses.

### Adjustment of Burner

After a burner has been installed in a boiler, it must be properly adjusted for efficient service. Assuming that the burner has been properly set and such details as impingement of burning gases directly against water-cooled surfaces have been guarded against, the next step is to establish the fuel and air rates.

The adjustment of the burner consists of regulating the quantities of oil and air admitted. The rate of oil consumption depends of course on the heating load, that is, size and character of house, temperature to be maintained, etc. The adjustment of the air admission depends upon the quantity of fuel to be burned. A definite quantity of fuel burned requires a definite quantity of air. The proper flame is the one which appears least attractive because of its slightly smoky appearance. It is well for the average owner to refrain from any attempt to adjust the burner.

With any oil burner, it is important to give considerable attention to the setting of the dampers, especially the stack damper. The underwriters have the following to say regarding this:

> Dampers which may entirely close the chimney uptake are prohibited. Damper area should be carefully determined in each case but in no case shall it be greater than 80 per cent of the internal cross-sectional area of the uptake.

Very often, in the adjuster's zeal to cut down the loss of heat up the stack, he will almost entirely close the stack damper, resulting in a leaking of burned gases into the rooms of the house. One simple method of determining whether or not this leakage is occurring is to place a candle flame, or flame of a match, near the fire door which has been slightly opened, as illustrated in Fig. 13. The flame should be drawn into the furnace; if it is not, there is indication of a pressure in the furnace caused by a blocked chimney passage.

The automatic controls very often require some little adjustment after installation in order that the proper room temperature may be maintained. Adjustments of oil burners had best be left to the installation men and generally there should be no tinkering on the part of the owner.

### Care of Burner

As in the case of any other mechanism, a little care in the following of certain directions that are given in printed form by the manufacturers or agents of the burner will be well repaid. Oil-burner men are subject to service calls for minor ailments easily remedied by the owner if just a little attention were devoted to the burner. Accidental dropping of a drip bucket or the blowing of a fuse account for many service calls, and these could easily be remedied by the owner.

Instructions as to oiling and general care of the burner should be followed strictly. Various agents have different plans for the care of the burner. Some periodically overhaul and oil the moving parts at a nominal price, and thus each heating season is begun with a plant in good condition.

In the summer, the temperature of the basement is generally somewhat lower than the outside temperature and there is apt to be a general dampness which tends to corrode parts of the burner. As far as is feasible the removal of motors and other parts likely to be injured is recommended.

It is well for the owner to refrain from attempting adjustment. The prime requirement for burning oil economically is that the proper proportions of air and fuel shall be admitted to the furnace.

### Safety

A question of great importance in installing an oil burner is safety. Some commendable work has been done by the Underwriters' Laboratories wherein various burners have been investigated from the standpoint of safety. The underwriters do not test burners for efficiency. To quote from a pamphlet issued by them:

> Primarily, the questions to be settled are: Will this burner set fire to the building in which it is installed, or is there a possibility of its causing an explosion, or being instrumental in injuring the person giving it the ordinary amount of attention required?
>
> Roughly speaking, there are three parts to the work of a complete investigation of any oil-burning equipment. These include a study of the design and construction from blue prints and the actual samples; tests of the samples and an investigation of the field service record.
>
> As one of the important factors in the use of burners of this type is the selection of suitable grades of oil, at least part of the test work is done using the lowest grade of oil which the submittor claims is suitable.
>
> In general, the listing of any oil-burning equipment by Underwriters' Laboratories means that the equipment has been examined and tested, and found to comply with the minimum requirements in effect for its class, and that the manufacturer has agreed to maintain the standard established and to identify the listed product with the marking agreed upon. Particular attention should be paid to the exact form of marking used to designate the listed device as stated on each card and in the regularly published list under the heading of "Marking." The listing of oil burners as standard does not mean that the products listed are necessarily equivalent in quality or merit. Any question with regard to the effect of the installation of an oil burner on insurance rates should be taken up with the company insuring the property or with local authorities having jurisdiction.

In addition to the safety of the burner itself there are to be considered the matters of placing tanks, installation of piping, the burner proper, and in some cases the electric wiring. In handling all of the items the installer should have in mind the National Board of Fire Underwriters' rules and the national electric code.

The underwriters' designation on a burner is looked for when considering the device from the standpoint of a fire hazard, but a burner should not arbitrarily be eliminated because it does not bear such approval. There are undoubtedly many burners not listed by the underwriters which present just as little fire risk as those listed. As a matter of fact many of the burners have not been submitted to the underwriters for test and still others may be on the waiting list.

### Faulty Installation and Adjustment Cause Fire

Investigations made by the Department of Agriculture have disclosed the fact that a great number of the oil-burner fires can be traced to faulty installation and adjustment rather than inherent weakness in the burner.

Safety is of paramount importance in any device to be used in the home and, regardless of any advantages claimed, no one would be justified in installing a burner that is not reasonably safe. The Underwriters' Laboratories have tested and listed many of the burners now manufactured as complying with certain standards of minimum hazard. Burners that have been so tested bear a mark indicating the fact. However, the absence of such marking does not necessarily mean that a burner does not comply with the requirements of the Underwriters' Laboratories since there are on the market a number which have not been submitted for test or which are now on the waiting list.

---

**Triple Combination Pumper Delivered to Hershey, Pa.**

Hershey, Pa., now possesses a new Buffalo 350-gallon triple combination pumper equipped with two 35-gallon chemical tanks.

# COVERING CEMENTED TO FLOOR VIOLATES NEW YORK FIRE LAWS

**Linoleum Covering Permanently Attached to Floor of Fireproof Building Reduces Structure to Combustible Classification**

By WM. JEROME DALY

THE statement in the box briefly summarizes one of the most important decisions yet handed down in New York City by the Supreme Court of New York County—Justice Peter A. Hatting presiding. It grows out of litigation based on the following state of facts:

At the southeast corner of Fifth Avenue and 41st Street, opposite the great Public Library, New York, the Four Hundred and Seventy-Five Fifth Avenue Corporation (Farmers Loan & Trust Co.) erected a year ago a 23-story building on a plot 104 x 140, with safe deposit vaults in the basement, a bank and stores on

**Floor covering composed of linoleum, cork and rubber tiling cemented to the fireproof floor of a fireproof building in order to give the floor a finished surface, constitutes a fire hazard in violation of one of the chief purposes of the Building Code and therefore renders such building combustible.**

the ground floor and offices throughout the balance of the structure.

The Superintendent of Buildings refused to issue to the owners the customary certificate of occupancy, for the reason that the structure, he contended, did not conform to the plans and specifications and was in violation of the New York Building Code, in that 27 per cent of the floor area of the building was composed of "combustible material by cementing linoleum, cork and rubber tiling to the finished floor surface."

The owners of the building contended that the floor covering was no part of the building construction, and in consequence, filed an appeal with the Board of Standards and Appeals which has appellate jurisdiction over orders and regulations promulgated by the fire commissioner, the tenement house commissioner or the building superintendent.

The Board of Standards and Appeals is composed of five city officials, the chairman of the board being an architect of ten years' experience; three other members are qualified in building trades and the fifth member is the chief of the fire department.

The board sustained the decision of the superintendent of buildings and dismissed the appeal. The appellants then resorted to the use of a writ of certiorari, to have the decision of the Board of Standards and Appeals reviewed.

A hearing was had before Justice Hatting at which the building owners made the contention that the superintendent of buildings was without jurisdiction in the premises. They also contended that the composition of linoleum, cork and rubber tiling, affixed to the floor by cement did not constitute a fire hazard.

It was argued by counsel for the City of New York that if the contention of the building owners was a correct one, there would be no limit to the thickness and the combustible qualities of interior finish of the flooring of high buildings—thus making it possible to render life and property subject to extreme fire hazard and "might possibly cause great calamity in buildings."

The Court in handing down its decision on April 1st, accompanied it with the following opinion:

"While linoleum, cork and rubber tiling may be deemed floor covering within the usual contemplation, it may be distinguished in this instance from floor covering as ordinarily known, chiefly in the method by which it was attached to the floor. The building was constructed in accordance with the approved plans, so far as the solid structure was concerned, but the situation appears to be that the owners deviated from the plans in adding a surface which may be described as a 'finishing surface' composed of combustible substance.

"Although it has been demonstrated that this surface may be removed by the application or the use of tools, and its removal will disclose a finished floor complying in all particulars with the building code, its presence on the floor, intentionally permanently affixed thereto by cement, constitutes a fire hazard in violation of one of the chief purposes of the code * * * .

"The use of tiling in the corridors is especially obnoxious to the provisions of the code * * * .

"The objection of the superintendent of buildings seems to be well taken under the circumstances * * * ."

The owners of the building have since appealed from the foregoing decision by Justice Hatting, by filing notice of appeal with the Appellate Division of the Supreme Court.

## American-LaFrance Makes Changes

Hugh Logan, for many years associated with the American-LaFrance Company Fire Engine Company, has again taken up the active management of that company's sundry sales department. Mr. Logan, in his capacity as manager of sundry sales, has charge of the sale of all fire fighting equipment with the exception of heavy apparatus.

Chas. Cizek, also of the sundry sales department, has been appointed field sales representative.

## Kellogg Made Manager of Mine Appliance Co.

Edward H. Kellogg, assistant general sales manager of the Mine Safety Appliance Company of Pittsburgh has been promoted to general sales manager.

During the world war, Mr. Kellogg served in the research division of the Chemical Warfare Service and at present holds a commission as major in the Chemical Warfare Reserve Corps, United States Army. He attended George Washington University and is a graduate of Kansas State Agricultural College.

Edward H. Kellogg

Other changes in this organization includes the appointment of C. W. Nelson as Kentucky representative with headquarters at 4505 W. 8th Street, Cincinnati and Ray H. Magee as Southern West Virginia representative with headquarters at Mt. Hope, W. Va. Mr. Nelson was formerly safety engineer for the Hillman Coal and Coke Company and Mr. Magee was technical representative for the Grasselli Powder Company in West Virginia.

Beach M. Chenoweth and Thomas Brown have been appointed representatives for Tennessee and Alabama with headquarters at 650 Brown Marx building, Birmingham, Ala.

## Saves Two Cents, Wrecks Pumper

This is a story without names because of the unfavorable publicity that it might cause.

In a western city, one of the fire alarm boxes was minus a glass over the key guard. One of the firemen passed by this box daily on his way to and from meals, and he repeatedly called the attention of the chief to the fact.

To these remarks the chief replied, "Those glasses cost two cents each, and I am getting tired of putting new glasses in boxes every time there is a fire." This particular city had ninety fires a year.

Two boys noticed the small door on the fire alarm box hanging down. Boys are curious, Boys must learn for themselves the why and the wherefore.

Said one, "I never saw the inside of a fire alarm box. Let's see how it works."

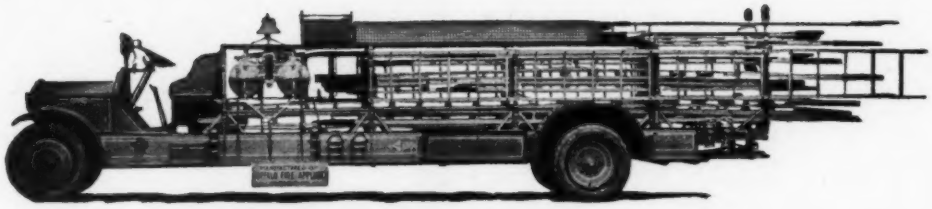
Somehow the lever was pushed down and an alarm turned in. In responding to the alarm, the pumper crashed into a truck carrying stone—three men were injured, one probably will carry his injuries for life. Incidentally the pumper was a complete wreck.

Because of the poor financial condition of the city, the pumper can not be replaced very easily, and if this is done, it will mean an expenditure of $12,000. In addition, the city may be named defendant in some law suits resulting from this accident.

Two cents was saved! And some man will hobble about for the rest of his life as an object of economy in fire department operation.

**Friend, Neb., Receives Chemical Car**—A chemical car has been delivered to Friend, Neb.

# BUFFALO



# BUFFALO

## Modern "Built-to-Your-Order" Apparatus
### is Making Good Wherever Placed in Service

because every piece of apparatus is designed by our experienced fire apparatus engineers in conjunction with the local fire officials to meet the specific requirement of the particular department or municipality making the purchase —and only the highest grade materials and workmanship go into the construction.

Every city, town or community selecting Buffalo apparatus is therefore certain to get dependable apparatus of just the type and size that will most effectively meet their own fire protection requirements.

Moreover, Buffalo Apparatus is economical. Our method of doing business and our large modern plant enable us to provide quality apparatus at comparatively low cost. This makes possible the immediate purchase of new apparatus with limited funds, or saves money that can be used to purchase other needed equipment or supplies.

***May We Tell You More About Buffalo Apparatus and the Buffalo Plan?***

**BUFFALO FIRE APPLIANCE CORP.**

**Main Office and Factory, Buffalo, N. Y.**

# BUFFALO

# Progressive Fire Engineering

FOR two decades great metropolitan centres have recognized the values in MACK fire-fighting units, but only within recent years have smaller communities seemed to realize that neither economy nor protection is procured by investing in apparatus of unknown worth.

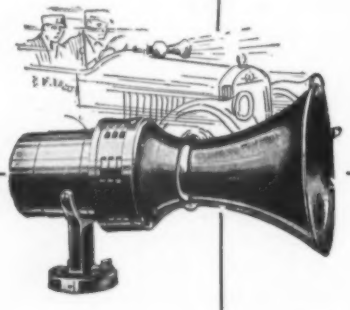
An example of high-grade equipment designed for smaller districts is the Triple Combination 500-gallon pumper illustrated. It has the ability to throw three first class streams from a hydrant, two of them from draft and the other by a special four-ratio pumping transmission particularly arranged for hydrant work.

A 100-gallon tank and hose on automatic reel permits a small fire to be combatted with minimum water damage. The chain drive and oversize tire equipment facilitates speed over bad roads common to semi-rural sections.

The full line of MACK Fire Apparatus includes motors of either 4 or 6 cylinders and pumping engines with capacities ranging from 350 to 1000 gallons per minute. Send today for complete descriptive literature.

MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

One hundred and four direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION", "MACK MOTOR TRUCK COMPANY", or "MACK TRUCKS OF CANADA, LTD."



# The Sterling No. 12 APPARATUS SIREN

*for*

***The Chief's Car and Other Apparatus — the Siren that Dominates Traffic***

Just a touch of the button and the mighty voice of the Sterling No. 12 clears traffic for blocks ahead! Can't be mistaken — never fails — endorsed by authorities everywhere. Complete with cord and switch, 6- or 12-v., only $40.00

STERLING LEADS IN

*Electric Sirens designed exclusively for blowing code signals*

*Electric Sirens for general alarms — the famous Model "M".*

*Factory Sirens — the Model "F" —*

*Electric Whistles — the "Little Giant"*

*Write for Information*

## The Sterling Siren Fire Alarm Co., Inc.

**61 Allen St., Rochester, N. Y.**

# OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

## Response to Fires

*To the Editor:*

After trying out all kinds of plans for informing the volunteer firemen of the location of a fire, we have about decided that it is a waste of time to even wait to answer a telephone. It is better to take advantage of the first automobile that comes along and tell the driver to rush to the fire.

As a rule, he will be glad to be of assistance, and incidentally, of being able to exceed the speed limit without fear of the traffic police. This plan has resulted in improving the promptness and efficiency of the firemen in responding to an alarm and in keeping down the fire losses. Very often the fireman can have the car stopped a block or two away from the fire, and this serves to hold up and stop other cars before they can get in the way of the fire department.

The custom has grown so that a number of the fire fans really try to be of service by looking out for firemen so that they can transport them to the fire.

Very truly yours,
THOMAS COATES.
Chief, Tillamook, Wash.

## Radio Can Reduce Fire Waste

By PHILIP A. FARRELL.

Among the scientific developments of modern times, is the radio. Fire Departments have kept pace with science, by calling into play those inventions that have been proven successful. Thus the telegraph and the telephone are two indispensable instruments of the fire departments throughout the Country. Radio holds out to us many opportunities in the task of preventing and fighting fires.

Radio can be brought into play in the work of fire prevention and fire protection. In the first place, nearly every second family boasts of a radio receiving set. Then there are innumerable broadcasting stations, and their number is on the increase. Some cities have installed and are operating municipal broadcasting stations. With the existing broadcasting stations and the legion of receiving sets, we have without great or possibly any costs, a potent and far reaching means of educating the general public, in fire prevention and protection.

Under the direction of the fire commissioner or the chief of the department, courses of lectures might be given. Heretofore the radio has been used to broadcast fire prevention lectures, but only during fire prevention week. Yet if a course of such lectures be conducted weekly on the same day each week, over a period of several months each year, much better results will be obtained.

There are four main causes of fire—criminal intent, carelessness, ignorance and spontaneous ignition. Of these the radio can modify the last three causes. This can be done by radio lectures touching on the care, use and storage of certain hazardous substances and implements, such as gasoline, matches, oil lamps, oily rags and waste, electric wiring and such other common substances, appliances and implements which give rise to fires that form the bulk of the nation's ash heap. Likewise such matters as cellars with accumulations of rubbish, obstructed fire escapes and locked means of egress, could be given the consideration which experience proves, they demand.

Domestic and commercial fire protection can be materially aided by the education of people in the utility and value of fire pails, fire extinguishers and appliances in the home, store, office or factory. Akin to this, we find often to the sorrow of those concerned, that there are many people who do not know how or where to transmit an alarm of fire. This means a delay in the arrival of the local fire department and a consequent spread of fire. In many cases it means the loss of life. This condition is traceable directly to ignorance— ignorance that can be removed in a most far reaching manner, by means of frequent radio fire prevention lectures.

In the work of fire fighting the trend of the times is toward the use of scientific methods. We find firemen and officers, the world over, studying ways and means of coping with fire situations in a more scientific manner. Fire schools and fire colleges are giving courses, state universities and colleges have opened special classes for fire officers, yet due to differences of time and place the majority of such men cannot avail themselves of these courses. The radio course in fire fighting, places all the advantages of attendance at a fire college or state university, within the reach of nearly every member of the fire department in many cities and towns. The municipality can either install a broadcasting station, or avail themselves of some private station, for an hour or two, one night each week. A number of fire stations or company quarters are already equipped with receiving sets. It not so fortunate, the members would no doubt be willing to pay a pro rata share to defray the expense of installing and upkeeping a radio receiving set.

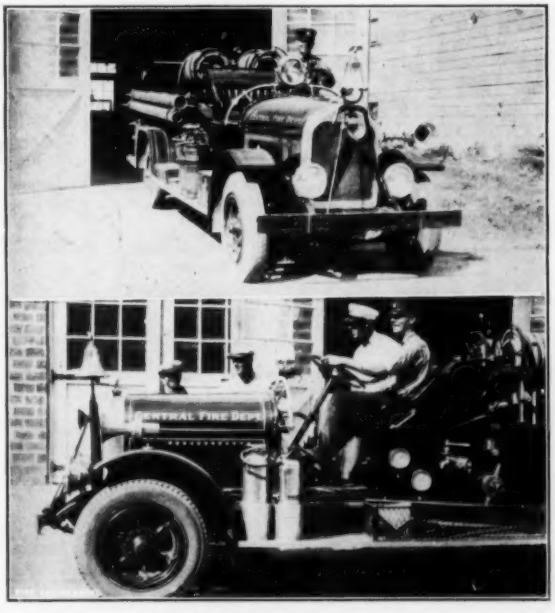
Not only could the fire college, state and private colleges give lectures, but chemists, civil engineers, engineers of the National Board of Fire Underwriters and Fire Chiefs from other cities might be invited to lecture on matters relating to fire prevention, protection and fire-fighting.

In a word, let our Fire Commissioners and Chiefs resolve that the radio is going to be a valuable and indispensable aid in the prevention of fire; in the protection of the home, factory, office, church and school against fire; and last but not least in the intellectual and scientific development of the officers and members of the paid and volunteer fire departments.

## Walnut Creek Designs Own Apparatus

So that they might have a fire apparatus that would best suit local conditions, Walnut Creek, a suburb of Oakland, Cal., has designed its own fire apparatus which was constructed at a cost of $7,000. The apparatus serves an area of over forty square miles and is manned by rural fire-fighters. It carries a large quantity of burlap to smother grass fires, and it also is equipped with rake and shovel outfits.

The apparatus is adapted to the mild California climate but if used in the East, it would be out of service for about five months of the year. It carries two hundred gallons of water and instead of chemical extinguishers, small water extinguishers are provided.



Two Views of the Walnut Creek, Cal., Designed Apparatus

The designers of this apparatus reasoned that water is just as effective as chemical streams and that water does not freeze in the Walnut Creek section.

The pumper received its first baptism of fire at the fire in the Coos Bay lumber plant. Here it pumped salt water from San Francisco bay for more than eleven hours. Both Chief Guy Spencer and his men are well pleased with their equipment.

HENRY SWEET.

## New England Association Plans for Exhibits

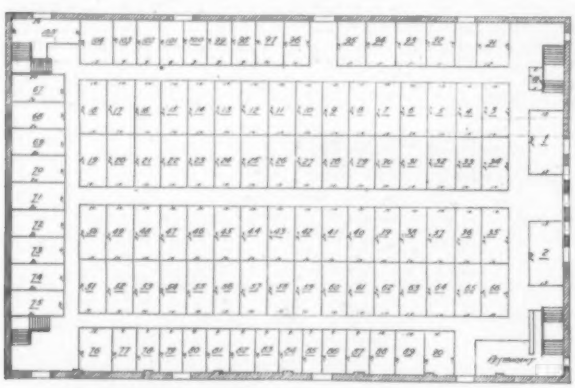
Exhibition space is being allotted in the Exposition Building in Portland, Me., for the convention of the New England Association of Fire Chiefs on June 21–23 in accordance with the accompanying diagram. The plan shows how the main floor has been divided into show space units. Here will be shown the various types of apparatus and equipment.

Chief William H. Hawkins, Haverhill, Mass.

The building is a substantial brick structure and is well lighted and ventilated. It is frequently used for state fairs, automobile shows and similar functions and should prove highly satisfactory for the display of fire department equipment.

The convention plans call for a bus service between the Congress Square Hotel and the Exposition Building and for a number of tests and demonstrations on lots adjoining the exhibit building which will assure a good attendance of chiefs.

The exhibition will open on Tuesday, the 21st, and continue until noon of Thursday, the 23rd. During this period the



Floor Plan of Exposition Building

building will be open from 9 a. m. to 10 p. m. and admission will be free.

Arrangements may be made with Chief Oliver T. Sanborn, of the Portland Fire Department, for drayage from the freight houses to the Exposition Building.

Contracts and rules and regulation blanks are now ready and may be obtained from Chief William H. Hawkins, Haverhill, Mass., chairman of the Exhibit Committee.

HARRY BELKNAP.

## New Rules of the New York Fire Department

(*Continued from page* 381)

members at fires and when riding upon Department apparatus responding to or returning from alarms for fire:

The helmet, a double breasted black rubber coat extending below the knees, black heavy rubber hip boots provided with inside soles of leather or of leather reinforced with steel, (except that during the day in Summer shoes or knee boots may be worn while on apparatus), blue flannel or black shirt (gray or white shirts for officers) and uniform or other trousers of dark material.

When the street temperature exceeds 75 degrees Fahrenheit, the rubber coat may be dispensed with.

Members assigned to Hook and Ladder Companies and Rescue Companies may wear, in place of the rubber coat, a dark waterproof coat extending below the thighs, but they shall have the regulation rubber coat ready for wear at all times.

Chauffeurs and Tillermen may dispense with the helmet while riding upon apparatus, but it shall be worn immediately upon arrival at fires.

Members operating high pressure hydrants shall wear the helmet.

Rubber coats and rubber hip boots shall have the name and badge number of owner stamped (with indelible ink) or painted, inside.

Hose spanners and straps shall be carried by firemen.

The fire clothing of members on duty shall be folded compactly, with helmet on top, on apparatus while in quarters. Before going off duty, members shall hang their fire clothing, in orderly fashion, on hooks adjacent to apparatus.

(*To be continued*)

## Cities Selected in Fire Waste Contest

For the second consecutive year, Albany, Georgia, has been awarded the grand prize in the Inter-Chamber Fire Waste Contest conducted by the National Fire Waste Council and the insurance department of the Chamber of Commerce of the United States. Other winners in their respective classes were Milwaukee, Huntington, W. Va., and Owensboro, Ky. The results of the 1926 competition were announced at a meeting of the National Fire Waste Council held in Washington, by the board of judges consisting of President John W. O'Leary of the National Chamber, H. A. Smith, Chairman of the insurance advisory committee of the National Chamber, George W. Booth, chairman of the contest grading committee of the National Fire Waste Council, Eugene Arms and Franklin H. Wentworth, members of the grading committee.

The accomplishments of the 1926 Contest surpass in every respect the contests of preceding years. Three hundred and three cities submitted reports, as compared with 221 during 1925, an increase of 37 per cent over the best previous record.

The honor cities in Class 1, cities of over 100,000 population in the 1926 Contest were as follows: Philadelphia, Pa., Portland, Ore., Rochester, N. Y., Detroit, Mich., New Orleans, La., Indianapolis, Ind., Fort Worth, Tex., Seattle, Wash., Grand Rapids, Mich., Wilmington, Del.

In class 2, cities of 50,000 to 100,000 population, the honor cities were: Pasadena, Cal., New Britain, Conn., Springfield, O., Bay City, Mich., McKeesport, Pa., Bethlehem, Pa., Fresno, Cal., St. Joseph, Mo., Charleston, W. Va. and Wichita, Kan.

Class 3 honor cities, comprising those between 20,000 and 50,000 population, were: Yakima, Wash., Mansfield, O., Battle Creek, Mich., Petersburg, Va., Uniontown, Pa., Butler, Pa., Baton Rouge, La., Hagerstown, Md., Lorain, O., and Riverside, Calif.

In Class 4, cities of under 20,000 population, the following cities received honorable mention: Billings, Mont., Fullerton, Cal., Laconia, N. H., Oceanside, Cal., Weston, W. Va., Torrance, Cal., Marlow, Okla., Pekin, Ill. Fremont, Mich., Ardmore, Okla., and Blackwell, Okla.

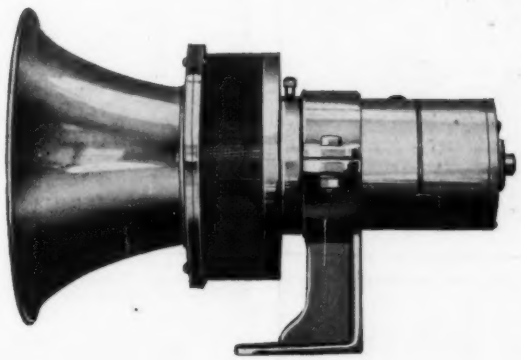
The National Fire Waste Council authorized the Board of Judges to give honorable mention for their states to those cities whose records, in the opinion of the Board, merited this distinction. The following cities were accordingly selected for this honor, all having made the best record in the contest in their states.

| | |
|---|---|
| Alexander City, Ala. | Billings, Mont. |
| Fullerton, Calif. | Laconia, N. H. |
| New Britain, Conn. | Rochester, N. Y. |
| Wilmington, Dela. | Mansfield, O. |
| Albany, Ga. | Tulsa, Okla. |
| Pekin, Ill. | Portland, Ore. |
| Indianapolis, Ind | Philadelphia, Pa. |
| Winfield, Kan. | Memphis, Tenn. |
| Owensboro, Ky. | Fort Worth, Tex. |
| New Orleans, La. | Burlington, Vt. |
| Hagerstown, Md. | Petersburg, Va. |
| North Adams, Mass. | Yakima, Wash. |
| Detroit, Mich. | Huntington, W. Va. |
| St. Paul, Minn. | Milwaukee, Wis. |
| St. Joseph, Mo. | Casper, Wy. |

**Eaton, Md., Makes Honorary Members for $2**—A drive is being made among the people of Eaton, Md., to secure honorary members and incidentally the support of the public for the fire department. For two dollars, one can be made an honorary member with the privilege of attending the meetings of the department.

# *Fire Departments Everywhere are Equipping Their Cars with the*

# C. A. M.



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The C. A. M. is a *quality* siren — sturdily made of the finest materials obtainable. It is *unconditionally guaranteed.*

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have been the recognized standard for fire departments for almost 50 years. Used everywhere. More than 900 designs. Send for illustrated catalog and prices.

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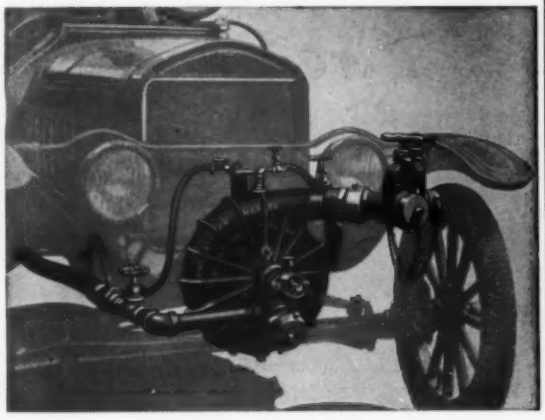

## FIRE PROTECTION
*At Low Cost*

*Here's the evidence—*

VERMONTVILLE, Mich.

"Gentlemen:
We are writing to inform you we are very much pleased with our Barton Fire Pump mounted on Reo Fire Truck which was purchased from you a few weeks ago. We have attended four fires and paid for the apparatus more than three times over at our first fire.

Very truly yours,
VANCE F. BARBER,
*Fire Chief.*"

*Write for complete details.*

AMERICAN STEAM PUMP CO.
Battle Creek, Michigan



*Shuredry* Salvage Covers

**COST LESS—**
**WEIGH LESS—**
**MORE EASILY HANDLED**

Chief Boyd, of the Knoxville, Tenn., Fire Department, has used "Shuredry" Salvage Covers for eight years. He says: "They are *waterproof, not affected by the weather, easy to handle, and altogether the most satisfactory covers we have ever used.*"

They do not freeze in winter, nor become tacky in summer. They are not subject to spontaneous combustion, nor to cracking where folded. One man can carry four up a ladder at one time.

Made in standard sizes. Write our nearest plant for samples and prices.

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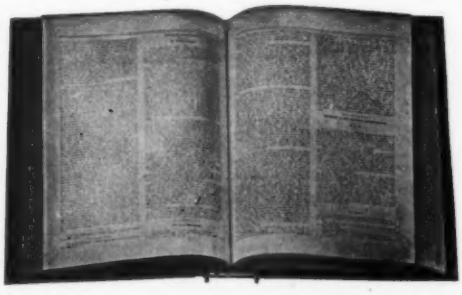

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# Bookings of "The Fire Brigade" Increase

(*Continued from page* 384)

| City | Theatre | Date |
|---|---|---|
| **Massachusetts** (Continued) | | |
| Salem | Salem | April 24–27 (changed from May 1–7) |
| Uxbridge | Town Hall | May 16–17 (changed from May 9–10) |
| Scituate | Satuit Playhouse | May 13–14 |
| Webster | Steinberg | May 3–4 |
| West Brookfield | Town Hall | May 26 |
| Winthrop | Winthrop-Dream | May 19–20 |
| Woburn | Strand | May 23–24 |
| **Michigan** | | |
| Adrian | Croswell | June 1–2 |
| Alpena | Maltz | June 15–16 |
| Benton Harbor | Liberty | June 22–23 |
| Big Rapids | Colonial | June 2–3 |
| Buchanan | Princess | August 23–24 |
| Cadillac | Lyric | June 15–16 |
| Detroit | Wolverine | April 28–29 (changed from May 31–June 1) |
| Jackson | Capitol | April 24–27 |
| Ludington | Lyric | June 21–22 |
| Rochester | Idlehour | April 21–23 |
| St. Joseph | Caldwell | June 6–7 |
| Traverse City | Lyric | June 14–15 |
| **Minnesota** | | |
| Minneapolis | | April 30 |
| St. Paul | | May 7 |
| **Missouri** | | |
| Kirkwood | Kirkwood | May 4–5 |
| **Montana** | | |
| Red Lodge | Isis | August 6–8 |
| **Nebraska** | | |
| Madison | Auditorium | April 26–28 |
| Peru | Crystal | July 11–13 |
| Seward | Rivoli | June 3–4 |
| **Nevada** | | |
| Fallon | Palace | May 1–2 |
| **New Hampshire** | | |
| Plymouth | Music Hall | Sept. 22–23 |
| **New Jersey** | | |
| Elizabeth | Regent | May 2–8 |
| Englewood | Englewood | May 2–4 |
| Hasbrouck Heights | Strand | May 5–6 |
| Kearney | Regent-Hudson | May 11–12 |
| Millburn | Millburn | May 9–10 (changed from May 13–14) |
| Millville | Levoy | May 9–11 |
| Perth Amboy | Strand | April 25–30 |
| Princeton | Garden | April 21–23 |
| Rahway | Empire | May 16–17 |
| Ridgefield | Rialto | May 2–4 |
| Roselle | Roslyn | May 20–21 |
| Rutherford | Rivoli | May 9–11 |
| Vineland | Grand | May 9–11 |
| Washington | Washington | May 2–3 |
| Westfield | Rialto | May 16–18 |
| Woodbridge | Woodbridge | May 11–13 |
| **New Mexico** | | |
| Roy | Pendleton | April 24 |
| **New York** | | |
| Brewster | Cameo | April 28–30 |
| Cedarhurst, L. I. | Central | June 5–6 |
| Clifton Springs | Palace | June 23–24 |
| Far Rockaway, L. I. | Columbia | May 12–15 |
| Great Kills, S. I. | Strand | May 1–2 |
| Hempstead, L. I. | Hempstead | May 1–4 |
| Mineola, L. I. | Mineola | May 2–5 |
| New Brighton, S. I. | Star | May 1–2 |
| Riverhead, L. I. | Capitol | May 3–5 |
| Rockaway Park, L. I. | Park | May 22–23 |
| Tarrytown | Music Hall | May 15–17 |
| West Brighton, S. I. | New Plaza | May 19–20 |
| White Plains | Loew's State | May 2–4 |
| Yonkers | Strand | April 30–May 3 |
| **North Carolina** | | |
| Salisbury | Capitol | July 11–13 |
| **Ohio** | | |
| Akron | Ideal | May 22–23 |
| Ashland | Rex | May 17–20 |
| Bowerstown | Alma | May 31–June 1 |
| Brilliant | Cameo | June 17–18 |
| Cadiz | Long's | June 9–11 |
| Carthage | Idle Hour | July 6–7 |
| Conneaut | La Grande | May 10–12 |
| Elmwood | Valley | June 16–18 |
| Gallipolis | Gallipolis | July 14–15 |
| Galion | Royal | May 12–14 |
| Georgetown | Arcade | May 8–10 |
| Granville | Opera House | May 14–15 |
| Jamestown | Venard | April 20–21 |
| Lima | Sigma | April 22 |
| Lowellville | Columbus | June 5–6 |
| Marblehead | Auditorium | June 12 |
| Miamisburg | Plaza | May 5–6 |
| Montpelier | Colonial | June 1–2 |
| Orville | Grand | April 18–20 |
| Osborne | Venard | May 2–3 |
| Plymouth | Deisler | May 20–21 |
| Reading | Lyric | June 15–17 |
| Somerset | Russell | May 11–12 |
| Sylvania | Speedway | June 6–7 |
| Warren | Robbins | May 22–25 |
| Wauseon | Princess | June 14–16 |
| **Oklahoma** | | |
| Ada | Liberty | April 18–19 |
| Davis | Strand | May 25–26 |
| Kingfisher | Temple | July 4–5 |
| Mangum | Nusho | May 20–21 |
| Sapulpa | Victorian | July 1–2 |
| Seminole | State | May 13–14 |
| Stigler | Lyric | May 16–17 |
| Wewoka | Rex-Keys | May 19–20 |
| Walters | Wollam | June 15–16 |
| Wirt | Liberty | April 12–13 |
| **Oregon** | | |
| Athena | Standard | April 8 |
| La Grande | Arcade | May 5–7 |
| North Bend | Liberty | April 29–30 |
| Roseburg | Liberty | May 1–3 |
| **Pennsylvania** | | |
| Allentown | Lotus | May 20–21 |
| Athens | Morley | June 24 |
| Bangor | Strand | June 6–7 |
| Bloomsburg | Columbia Opera House | June 27–29 |
| Canadensis | Amusement Hall | July 6 |
| Chambersburg | Capitol | May 9–11 |
| Easton | Berwick | May 2–3 |
| Hazleton | Grand | April 25–28 |
| Lansford | Victoria | May 17–19 |
| Mahony City | Victoria | May 18–20 |
| Minersville | Opera House | May 30–31, June 1 |
| Montrose | Ideal | August 14–15 |
| Mt. Carmel | Victoria | May 9–11 |
| Old Forge | Holland | June 29–30 |
| Philadelphia | Standton | Week of May 2 |
| Renovo | Rialto | May 30–31 |
| Sayre | New Sayre | June 22–23 |
| Scranton | Roosevelt | May 30–31 |
| Shamokin | Victoria | May 4–6 |
| Steelton | Strand | June 22–23 |
| Tamaqua | Victoria | May 24–25 |
| Wellsboro | Arcadia | June 23–24 |
| **Rhode Island** | | |
| Bristol | Pastime | May 2–3 |
| Watch Hill | Ninigret | August 3 |
| **South Carolina** | | |
| Florence | Opera House | July 11–12 |
| **South Dakota** | | |
| Aberdeen | Capitol | May 30–June 1–2 |
| Blunt | Legion | July 16–18 |
| Bristol | Orpheum | August 18–20 |
| Doland | Palace | April 30–May 1 |
| Faulkton | New | June 9–11 |
| Northville | Legion | June 21–22 changed from June 3 |
| Stratford | Pastime | April 16–18 |
| Wagner | Cozy | May 27–28 |
| White | Opera House | April 11–13 |
| **Tennessee** | | |
| Brownsville | Liberty | April 21–22 |
| Union City | Capitol | May 9–10 |
| **Texas** | | |
| Lubbock | Palace | October 2–6 |
| McLean | Legion | May 2–3 |
| Paris | Grand | April 25–26 |
| Phillips | Fair | June 6–7 |
| Wellington | Rialto | May 9–10 |
| **Utah** | | |
| Bingham | Princess | April 13–15 |
| Cedar City | Orpheum | May 31–June 1 |
| Copperfield | Diana | May 1–2 |
| Grantsville | Opera House | April 14 |
| Heber City | Ideal | May 2–3 |
| Milford | Orpheum | May 26–27 |
| Mt. Pleasant | Elite | April 24–25 |
| Provo | Columbia | April 29–30 |
| St. George | Electric | May 4—5 |
| Standardville | Standard | May 13 |
| Tooele | Strand | April 12–13 |
| **Vermont** | | |
| Bakersfield | Town Hall | July 25 |
| Manchester | Arcade | August 8–9 |
| Randolph | Music Hall | July 17 |
| St. Johnsbury | Gray's Star | August 8–9 |
| **Virginia** | | |
| Appalachia | Cumberland | June 30–July 1 |
| Berkley | Rex | May 23–24 changed from May 30 |
| Big Stone Creek | Amuzu | June 30– July 1 |
| Camp Eustis | War Department | May 23 |
| Cape Charles | Radium | May 19 |
| Chase City | Cozy | August 17–18 |
| Cherrydale | Firemen's Hall | May 14 |
| Chilhowie | Roseland | July 4–5 |
| Culpepper | Fairfax | May 6 |
| Dante | Dante | July 11–12 |
| Edinburg | Pearl White | July 26 |
| Franklin | Franklin | May 4–5 |
| Gate City | Amuzu | April 29–30 |
| Hampton | Scotts | May 9–11 |
| Harrisonburg | New Virginia | June 1 |
| Lamberpt | Apollo | May 25–26 changed from May 31 |

| City | Theatre | Date |
|---|---|---|
| **Virginia** (Continued) | | |
| Lexington | New | June 3-4 |
| Luray | Page | May 11-12 |
| Mt. Jackson | New | July 25 |
| New Market | Opera House | July 23 |
| Norfolk | Ghent | May 27-28 changed from June 1 |
| Norton | Lyric | July 11-12 |
| Occoquan | Lyric | May 13-14 |
| Onancock | Auditorium | April 18-19 |
| Shenandoah | Pastime | May 5-6 |
| Staunton | New | April 28-29 |
| Staunton | New | May 26-27 (changed from April 28) |
| Strasburg | Strand | July 21-22 |
| Suffolk | Chadwick | May 2-3 |
| Tazewell | New | May 4-5 postponed |
| Williamsburg | Imperial | May 19-20 |
| Virginia Beach | Virginia Beach | July 11 |
| Woodstock | New | July 19-20 |
| Wytheville | Opera House | June 16-17 |
| **Washington** | | |
| Aberdeen | D. & R. | April 25-28 |
| Anacortes | Empire | April 24-27 |
| Arlington | American | May 1-3 |
| Bremerton | Rialto | April 10-13 |
| Everett | Everett | Week of April 9 |
| Hillyard | Rialto | April 24-26 |
| Hoquiam | Arcade | May 2-5 |
| Ilwaco | Ilwaco | July 2-4 |
| Seattle | Egyptian | April 19-21 |
| Sedro Woolley | Dream | April 19-21 |
| Spokane | Empress | May 15-18 |
| Tacoma | Rialto | Week of April 23 |
| Yakima | | May 20-23 |
| **West Virginia** | | |
| Grantsville | Grantsville | May 19 |
| Montgomery | Lyric | April 12-13 |
| Mullens | Wyoming | April 25-26 |
| Pt. Pleasant | Lyric | June 1-2 |
| St. Mary's | Auditorium | May 17 |
| Spencer | Auditorium | May 19 |
| **Wisconsin** | | |
| Beaver Dam | Davison-Odeon | May 18-20 changed from May 4 |
| Brillion | Auditorium | June 25-26 |
| Cudahy | Whitehouse | April 27-29 |
| Darlington | Orpheum | June 23-25 |
| Dodgeville | Crystal | May 9-11 |
| Ft. Atkinson | Crystal | April 11-13 |
| Lancaster | Orpheum | June 16-18 |
| Mayville | May | May 15-16 |
| Marshfield | Adler | June 30-July 1 |
| Milwaukee | Modjeska — Tower | April 12-14 changed from April 26-28 |
| Monroe | New Monroe | April 17-19 |
| Mondovi | Grand | May 27-29 |
| Norway | Rialto | May 2-3 |
| Prescott | I. O. O. R. Hall | June 19-20 |
| Tigerton | Opera House | June 26 |
| Tomah | Unique | June 9-10 |
| Tomahawk | Princess | June 7-8 |
| Two Rivers | Rivoli | May 24-26 |
| Shullsburg | Opera House | May 27-28 |
| **Wyoming** | | |
| Cody | Temple | April 17-18 |
| Cowley | Hub | August 4 |
| Green River | Isis | May 18-19 |
| Lovell | Armada | August 2-3 |
| Rock Springs | Rialto | April 11-12 |
| Thermopolis | Whitney | May 31-June 1 |
| Wheatland | Isis | April 6-7 |

## CONVENTION DATES

April 21—SOUTHEASTERN PENNSYLVANIA FIREMEN'S ASSOCIATION. Annual Meeting, Lebanon, Chemical Fire House, Lebanon, Pa.

May or June—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 22nd Annual Convention, Darlington, S. C., date at pleasure of Convention City. Secretary, R. S. Hood, Sumter, S. C.

May 3-4—SOUTH DAKOTA ASSOCIATION OF FIRE CHIEFS. Annual Convention, Brookings, S. Dak. Secretary, Chief C. M. Johnson, Rapid City, S. Dak.

May 9-12—NATIONAL FIRE PROTECTION ASSOCIATION (International). 31st Annual Meeting, Congress Hotel, Michigan Ave. and Congress Street, Chicago, Ill. Secretary, Franklin H. Wentworth, 40 Central St., Boston (9), Mass.

May 31-June 3—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. 21st Annual Convention, Niagara Falls, N. Y., in connection with Conference of New York State Mayors and Other City Officials. Secretary, Chief James H. Golden, Cohoes, N. Y. Chairman, Exhibit Committee, Chief John Espey, Elmira, N. Y.

June 1-2—INSTITUTION OF FIRE ENGINEERS (British). 4th Annual Conference, Liverpool, England. President, Firemaster A. Pordage, Edinburgh, Scotland. Interim Secretary, Miss M. B. Calder, Edinburgh Fire Brigade.

June 7-9—OHIO FIRE CHIEFS' ASSOCIATION. 10th Annual Convention, Mansfield, Ohio. Secretary, Chief Philip J. Harty, Fire Department, Youngstown, Ohio, Sheet and Tube Company.

June 7-9—SOUTH DAKOTA FIREMEN'S ASSOCIATION. Annual Convention, Pierre, S. Dak. Secretary, J. J. Waltner, Freeman, S. Dak.

June 8—NORTHWEST ARKANSAS FIREMEN'S ASSOCIATION. Annual Convention, Springdale, Ark. Secretary-Treas., F. M. Brock, Bentonville, Ark.

June 14-16—TEXAS STATE FIREMEN'S ASSOCIATION. Annual Convention, San Antonio, Tex. Secretary, Olin Culbertson, Hillsboro, Tex.

June 16-18—PROVINCIAL FEDERATION OF ONTARIO FIREFIGHTERS. Annual Convention, Windsor, Ont., Can. Secretary-Treasurer, David H. Lamb, 132 Bellevue Ave. (2) Toronto.

June 17-19—WISCONSIN STATE FIREMEN'S ASSOCIATION. 40th Annual Convention, Baraboo, Wis. Secretary, E. Philip Mueller, Jefferson, Wis.; State Organizer, Chief H. H. Niemeyer, Portage, Wis.

June 17-20—SIX COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Sunbury, Pa.

June 21-23—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual Convention, Hollywood, Fla. Secretary, Chief F. C. Pfaender, Winter Haven, Fla.

June 21-23—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 38th Annual Convention, Poughkeepsie, N. Y. Secretary, Chief Chris W. Noll, Fire Department, Poughkeepsie.

June 21-23—KENTUCKY STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATION. 9th Annual Convention, Owensboro, Ky. Secretary-Treasurer, Capt. S. G. Render, 303 Speed Bldg., Louisville, Ky.

June 21-23—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 5th Annual Convention, Congress Hotel, Portland, Me. Secretary, Chief John W. O'Hearn, Watertown, Mass. For reservations address Geo. P. Cobb Traffic Manager, 774 Albany Street, Boston, Mass.

June 21-24—THIRD SHORT COURSE IN FIRE PREVENTION. To be held at University of Illinois, Urbana. Address, C. E. Palmer, 401 Engineering Hall, University of Illinois, or State Fire Marshal John G. Gamber, Springfield, Ill.

June 27-29—MICHIGAN ASSOCIATION OF FIRE DEPARTMENT CHIEFS. Annual Convention, Bay City, Mich. Secretary, Chief Frank Ford, Highland Park, Mich.

July 12-14—MICHIGAN STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Lansing, Mich. Secretary, H. L. Williams, Luddington, Mich.

July 13-14—INDIANA FIREMEN'S ASSOCIATION. 10th Annual Convention, Indianapolis, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

July 19-23—SOMERSET COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Rockwood, Pa. Secretary, J. R. Shanks, Rockwood, Pa.

July 25-28—DOMINION ASSOCIATION OF FIRE CHIEFS. 19th Annual Convention, Hull, Quebec. Secretary, Chief James Armstrong, Kingston, Ont.

August—IDAHO STATE FIREMEN'S ASSOCIATION. Annual Convention, Wallace, Idaho, tentative date, last week of August, to be decided later. Secretary, Willard Adams, Rigby, Idaho.

Aug. 1-2—WASHINGTON STATE FIREMEN'S ASSOCIATION. Annual Convention (Tentative date), Chehalis, Wash. Secretary, H. S. Jenkins, City Electrician, Fire Headquarters, Bellingham, Wash.

Aug. 6—CALIFORNIA STATE ASSOCIATION OF FIRE CHIEFS. Annual Convention, Portland, Ore. Secretary, Chief William Cooper, Richmond, Cal.

Aug. 7-8—OREGON STATE FIRE CHIEFS' ASSOCIATION. 8th Annual Convention, Portland, Ore. Secretary, Thomas Coates, Tillamook, Ore.

Aug. 9.—MASSACHUSETTS PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, New Bedford, Mass.

Aug. 9-11—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 26th Annual Convention, Western Port, Md. Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 55th Annual Convention, Portland, Ore. Secretary, Chief J. J. Mulcahey, Yonkers, N. Y.; Executive Secretary, State Fire Marshal Jay W. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Albert Herring, Murphysboro, Ill.

Aug. 14-16—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, Elmira, N. Y. Secretary-Treasurer, Frank A. Emden, 1200 Lenox Avenue, Utica, N. Y.

Aug. 16-19—FIREMEN'S ASSOCIATION, STATE OF NEW YORK, and WESTERN NEW YORK VOL. FIREMEN'S ASSOCIATION. Joint convention of both associations, Niagara Falls, N. Y. Secretary, State Association, Fred A. Davis, Fort Edward, N. Y.; Secretary, Western N. Y. Association, Henry A. Clark, 21 Porter Avenue, Batavia, N. Y.

Aug. 24-26—VIRGINIA STATE FIREMEN'S ASSOCIATION. 41st Annual Convention and tournament, Alexandria, Va. Secretary, E. K. Landis, Pulaski, Va.

Aug. 24-27—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Stockton, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Street, San Diego, Cal.

Sept. 7—DELAWARE STATE FIREMEN'S ASSOCIATION. 7th Annual Conference, Rehoboth Beach, Del. Secretary, Sam H. Carson, Dover, Del.

Sept. 7-8—MISSOURI STATE FIRE CHIEFS' ASSOCIATION. 5th Annual Convention, Kirksville, Mo. Secretary, District Chief J. T. Lynch, Kansas City, Mo.

Sept. 7-8—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 2d Annual Convention, Kirksville, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 12-14—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Russellville, Ark. Secretary, H. D. Compton, Little Dock, Ark.

Sept. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 40th Annual Convention, Jacksonville, Ill. Secretary, Roy A. Alsip, Champaign, Ill.

Sept. 20-21—IOWA STATE FIREMEN'S ASSOCIATION. 50th Annual Convention and Anniversary, Emmetsburg, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 22-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION 50th Annual Convention and Anniversary, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Oct. 4-6—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Shamokin, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 17-19—KANSAS STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATIONS. 11th and 40th Annual Conventions, Kansas City, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

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All moving parts are bronze or bronze-bushed.

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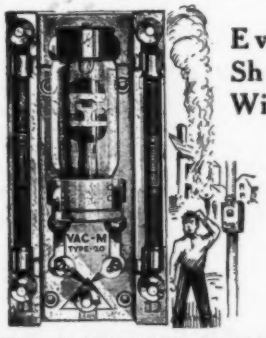


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THE publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself—

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4. To refuse to publish "puffs," free reading notices or paid "write-ups"; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?"
5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity.
6. To solicit subscriptions and advertising solely upon the merits of the publication.
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8. To co-operate with all organizations and individuals engaged in creative advertising work.
9. To avoid unfair competition.
10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

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Invincible and Callahan Nozzles

**Fire Department Supplies**

are in use throughout the country and giving unsurpassed service.

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*1—It Fits the Stream to the Blaze.*
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Should water pressure become low the outlet can be regulated by turning sleeve "A" to meet the conditions.

That's Efficiency.

Watch for Point 4, Next Issue.

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**L. P. Brown Machine & Tool Co.**

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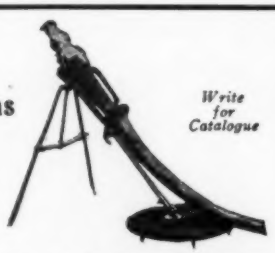
## Eastman Improved Platforms and Holders



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are indispensable where high pressure service is required. With Eastman equipment any size streams can be easily handled by one man.

**Eastman Nozzles and DeLuge Sets**

are designed by engineers who for over thirty years have specialized in equipment for producing fire-fighting streams that are unsurpassed for solidarity, distance and effectiveness.

**Samuel Eastman Co.,**

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# FIRE DEPARTMENT ACTIVITIES

**Erie, Pa., Plans to Extend Fire Alarm**—An investigation is being made as to the cost involved to extend the fire alarm system in Erie, Pa.

**Great Falls, Mont., Votes Against 8-Hour Day**—By a close vote, the plan to have an eight-hour day for the firemen in Great Falls, Mont., was defeated.

**Work Pushed on Edgemere, N. Y., Fire Station**—Work is well under way on the new fire station being erected in Edgemere, L. I., to relieve the congestion of Far Rockaway companies. When completed the building will cost $100,000.

**Newton, Mass., Apparatus Crashes into Truck**—Four firemen from Newton, Mass., were injured when the apparatus on which they were responding to a brush fire crashed into a truck.

**Pomona, Cal., May Have Paid Department**—A movement has started for the establishment of a paid fire department in Pomona, Cal. A conference has been held to consider means for reducing the traffic hazard of responding to alarms.

**St. Clair, Mich., Purchases Pumpers**—Two four hundred-gallon Foamite-Childs pumpers have been purchased by St. Clair, Mich. One will be housed at each end of the village. Delivery of the apparatus is expected in thirty days.

**Stevens Speaks at Tulare County Association**—Jay W. Stevens, state fire marshal of California, spoke at the second annual meeting of the Tulare, Cal., County Fire Association in Vasalia. He spoke on "Service."

**Traffic Signals for New York**—A plan for a one-man traffic control system is being worked out for New York city. One man at some central point will control all the signal lights in Manhattan.

**Graney, Chief of Dobbs Ferry, N. Y.**—John J. Graney has been elected chief of Dobbs Ferry, N. Y. Other officers are Thomas Fay, first assistant chief and Edward French, second assistant chief.

**Two Maxim Apparatus Sales Reported**—A Maxim city service truck was delivered to Carlstadt, N. J., and a 400-gallon Maxim pumper delivered to Tuckahoe, N. Y., passed the Underwriters' test. Both of these sales were made by the Woodhouse Mfg. Co.

**Texas Votes for National Standard Thread**—The governor of Texas signed a bill adopting the National standard thread and appropriating $5,000 for the next two years to cover the cost of rechasing hydrant and hose threads to conform with this standard.

**Firemen Killed Jumping on Truck**—Some one in St. Stephens, N. B., sent in a false alarm. As the apparatus was responding, a call fireman attempted to jump on the truck and was killed. The city council voted a monthly allowance for the widow of the fireman.

**Atlantic City, N. J., Celebrates Anniversary**—Dinner was served in all of the fire stations in Atlantic City, N. J., to celebrate the twenty-third anniversary of the paid fire department. Sixteen men who saw service in the old volunteer unit, are still in the department.

**Fire Prevention Bureau Formed in Ft. Wayne, Ind.**—A fire prevention bureau which began to function on April 15, was formed in Ft. Wayne, Ind. The bureau plans to educate the public in proper building methods and ways in which to insure protection from fires.

**Charges Control of Chicago Hose Prices**—Fire Commissioner Joseph F. Connery of Chicago, Ill., charged that there was a combination to control the prices of fire hose used by the city, and all recent bids for hose have been rejected. Seven out of eight bids were for 71¼ cents per foot, as compared with the price of 52.2 cents which existed three years ago.

**Brookline, Mass., to Clean Tenements**—A drive has been started in Brookline, Mass., to free the halls and stairways of tenements from material which may block such passages. It has been found that conditions in some of the better apartment houses are just as bad as those in the tenement homes of the poorer class.

**Friends Honor Chief Hutsell of Indianapolis**—Friends of Chief Jesse A. Hutsell of Indianapolis, Ind., surprised him with a reception at fire headquarters in honor of completing twenty-five years continuous service in the fire department. Many beautiful floral pieces and gifts were received. In talks given by members of the board of public safety, Chief Hutsell's record was commended.

**Many Sales of Sterling Sirens Reported**—The following New York state towns have purchased Sterling code blowing sirens: Copake, Wallkill and Catskill. A system of twenty-eight boxes and three punch tape registers, one for each of the fire houses, has been installed in Rochester, N. Y.

**Chief Schnibben of Wilmington, N. C., Injured**—Chief Charles Schnibben of Wilmington, N. C., was painfully injured when he fell from the second floor of a burning building. No one was with the chief when he fell and it is believed that he became strangled with smoke and fell down an unguarded stairway. Coincident with the accident, Chief Schnibben celebrates his thirty-first anniversary as head of the department.

**Portland, Ore., to Build Fire Boats**—Portland, Ore., is inviting bids for the construction of three new fire boats, which will be built at an estimated cost of $300,000. This improvement, together with the construction of eight new fire stations, is being financed by a $735,000 bond issue which was approved on November 2. The boats will have a capacity of 8,500 gallons per minute at a pressure of 200 pounds. They will be driven by gasoline motors.

---

## Massachusetts Chiefs Arrange Trip

The date for the convention of the International Association of Fire Chiefs at Portland, Oregon, has been set for August 9th to 12th inclusive. The following tentative plans have been made for the trip of the Mass. Fire Chiefs' Club and New England Association of Fire Chiefs:

| | | | | |
|---|---|---|---|---|
| Lv. Boston | 10.15 P. M. | July | 29 | Boston & Maine R. R. |
| Ar. Montreal | 8.50 A. M. | " | 30 | Canadian Pacific Ry. |
| Lv. Montreal | 10.15 P. M. | " | 30 | " " |
| Ar. Banff | 8.15 A. M. | Aug. | 3 | " " |
| Lv. Banff | 3.00 P. M. | " | 3 | |
| Ar. Lake Louise | 5.00 P. M. | " | 3 | |
| Lv. Lake Louise | 10.00 A. M. | " | 4 | Canadian Pacific Ry. |
| Ar. Vancouver | 8.30 A. M. | " | 5 | " " " |
| Lv. Vancouver | 10.30 A. M. | " | 5 | Canadian Pacific steamer |
| Two hours at Victoria | | | | |
| Ar. Seattle | 9.00 P. M. | Aug. | 5 | |
| Lv. Seattle | 9.00 A. M. | " | 6 | Northern Pacific Ry. |
| Ar. Tacoma | 10.20 A. M. | " | 6 | " " " |
| Side trip to Mt. Ranier | | | | |
| Lv. Tacoma | 11.15 P. M. | Aug. | 6 | Great Northern Ry. |
| Ar. Portland | 6.15 A. M. | " | 7 | " " " |
| Lv. Portland | 9.00 P. M. | " | 12 | Southern Pacific Ry. |
| Ar. San Francisco | 7.30 A. M. | " | 14 | " " " |
| Lv. San Francisco | 6.00 P. M. | " | 14 | " " " |
| Ar. Los Angeles | 8.50 A. M. | " | 15 | " " " |
| Auto tour to San Diego and Tia Juana and return | | | | |
| Lv. Los Angeles | 11.00 A. M. | Aug. | 17 | Union Pacific Ry. |
| Ar. Salt Lake | 12.30 Noon | " | 18 | " " " |
| Lv. Salt Lake | 8.00 P. M. | " | 18 | " " " |
| Ar. West Yellowstone | 7.30 A. M. | " | 19 | " " " |
| Lv. West Yellowstone | 7.00 P. M. | " | 20 | " " " |
| Ar. Salt Lake | 7.30 A. M. | " | 21 | " " " |
| Lv. Salt Lake | 7.55 A. M. | " | 21 | Denver & R. G. Ry. |
| Ar. Colorado Springs | 10.10 A. M. | " | 22 | " " " |
| Side trip Pike's Peak | | | | |
| Lv. Colorado Springs | 5.05 P. M. | Aug. | 22 | " " " |
| Through sleeper Colorado Springs to Chicago | | | | |
| Ar. Denver | 7.40 P. M. | Aug. | 22 | Denver & R. G. Ry. |
| Lv. Denver | 11.30 P. M. | " | 22 | " " " |
| Ar. Chicago | 7.00 A. M. | " | 24 | |
| Lv. Chicago | 5.30 P. M. | " | 24 | |
| Ar. Boston | 7.25 P. M. | " | 25 | |

The entire expense, it is estimated, should be about five hundred dollars including railroad fares, sleepers, hotels, meals, etc. Connecticut Chiefs could join party at Montreal.

George Cobb urges those who will take this trip to make reservations at once even if one will have to cancel later.

Final arrangements and correct expense will be given out as soon as we can get an idea of number of chiefs who will be with this New England delegation. Communications should be sent to George F. Cobb, Traffic Manager, Mass. Fire Chiefs' Club, New England Association Fire Chiefs, 744 Albany St., Boston, Mass.

# PROPOSED IMPROVEMENTS

**Coatesville, Chester Co., Pa.**—A new aerial ladder truck may be purchased for the Brandywine Fire Co.

**Far Rockaway, Queens Co., N. Y.**—Inwood Fire District, incorporated. It is now possible to call a special election to vote on the proposition to raise funds for the purchase of a site and the erection of fire station and the purchase of additional fire equipment.

**Ross, Marin Co., Cal.**—A $100,000 bond issue was sold; part of this is to be used for construction of a fire station and purchase of fire apparatus and other equipment.

**Newman, Stanislaus Co., Cal.**—C. D. Price is organizing the grain farmers who will be asked to contribute toward the purchase of fire apparatus to be manned by volunteers.

**Byron, Ogle Co., Ill.**—The township may purchase a piece of fire apparatus for rural use.

**Marion, Marion Co., Ohio.**—In his annual report Chief Thos. J. McFarland, fire department, strongly recommended the purchase of a pumper to replace the one in use now.

**Rainier, Columbia Co., Ore.**—Officers of new fire department making plans for purchase of equipment, suits, etc. Edward Brough, Chief.

**St. Johns, Multnomah Co., Ore.**—Bids for the three new fireboats authorized will be opened soon and contracts for building them awarded.

**St. Albans, Franklin Co., Vt.**—On April 4th an election was held on the question of motorizing the fire department.

**San Francisco, Cal.**—Fire commission requested that new fire station be erected at junction of Third and Fourth streets in the lumber district.

**Blackwood, Camden Co., N. J.**—Union Fire Co. of Blackwood Terrace raising funds for purchase of a siren.

**Natural Bridge, Jefferson Co., N. Y.**—Fire department to be reorganized and plans made for securing adequate fire equipment.

**Wyndmere, Richland Co., N. D.**—Funds being raised for the purchase of new equipment for the fire department.

**Avoca, Steuben Co., N. Y.**—Election was held April 19, to vote on the question of the purchase of a pumper for the fire department.

**Glens Falls, Warren Co., N. Y.**—Chief Forest Stanley, fire department, has petitioned for additional fire equipment for the fire department.

**Newburgh, Orange Co., N. Y.**—Chief Nixon urging the installation of a fire alarm system here.

**Lewistown, Mifflin Co., Pa.**—City council considering petition for a new fire alarm system.

**Scranton, Lackawanna Co., Pa.**—City council considering including the purchase of fire apparatus and the erection of a fire station in the Lincoln Heights section.

**Vancouver, Clarke Co., Wash.**—It is being planned to install a fire alarm system in the industrial system. Money for this system should be furnished partly by the city and partly by business concerns.

**Williamson, Mingo Co., W. Va.**—An electric fire alarm siren was recently purchased from the Sterling Siren Fire Alarm Co., Rochester, N. Y.

**Ellisburg (Mail Camden), N. J.**—The Delaware township committee passed an ordinance for the purchase of a pumper to cost $8,500 for the Woodland Fire Co.

**Dunellen, Middlesex Co., N. J.**—Chief LeRoy Woodhull requested that a new fire alarm system be installed here.

**Pleasantville, Atlantic Co., N. J.**—Plans are being made to organize a volunteer fire department.

**West Milford, Passaic Co., N. J.**—The Volunteer Fire Co. of Upper Macopin in West Milford county is to erect a new fire station.

**Palo Alto, Santa Clara Co., Cal.**—A chemical fire engine is to be purchased for the South Palo Alto fire department. Additional equipment will also be purchased.

**Stockton, Sa Joaquin Co., Cal.**—A new central fire alarm station is to be erected.

**Southington, Hartford Co., Conn.**—New fire alarm system to be installed in this city.

**Newell, Buena Vista Co., Iowa**—Fire department raising funds for the purchase of a new fire siren.

**Adel, Dallas Co., Iowa**—A Peter Pirsch fire engine was recently purchased for the local fire department.

**Salisbury, Wicomico Co., Md.**—City to receive bids for $35,000 bonds for fire station, site and equipment.

**Arlington, Middlesex Co., Mass.**—At annual town meeting it was voted to purchase more fire apparatus.

**Dedham, Norfolk Co., Mass.**—Plans are being made for the purchase of a new fire pump for the local fire department.

**Birmingham, Oakland Co., Mich.**—This year's budget is to include an appropriation for the organization of a fire department.

**Secaucus, Hudson Co., N. J.**—Council considering the installation of a new fire alarm system here.

**Deming, Luna Co., N. Mex.**—The fire committee of the city council has authorized the standardization of fire hydrants, hose, etc., to conform with the national standard.

**Woodstock, Ulster Co., N. Y.**—Woodstock Fire Co. raising funds for the purchase of new fire equipment.

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In the Market
for equipment or supplies make your wants known through FIRE ENGINEERING. More bidders mean more competition and better satisfaction.

## Proposals for Fire Hose

FLORHAM PARK, N. J.

*Bids opened May 2, 1927*

Bids will be received, opened and publicly read at the Borough Hall, Borough of Florham Park, in the County of Morris and State of New Jersey, at eight o'clock P. M. May 2nd, 1927, for the furnishing of 1500 lineal feet, more or less, of two and a half inch (2½") Fire Hose equipped with suitable connections.

Bidders will submit samples for each quality covered by bids.

Certified checks in the amount of ten per cent shall accompany each bid.

The Borough reserves the right to reject any or all bids.

Jas. J. Welsh,
4-20 Borough Clerk.

## Two Killed During Speed Tests

Two firemen in Verdun, Canada, were killed and four were injured in an apparatus crash that resulted from an attempt to better a speed record. The injured were removed to the Montreal General Hospital.

The men attempted to better a speed record that they had made the day previous. Those who saw the accident state that the apparatus was going at a pace of sixty miles an hour when the catastrophe occurred.

One of the front wheels of the machine struck a piece of macadam that workmen who had been repairing the road had left. The driver lost control of the machine and before he could right the front wheels, the apparatus crashed into a telephone pole, rebounded and glanced off against a large tree. The impact smashed the pole and a small tree, and scattered the firemen who were riding on the machine, all over the road.

The Coroner's jury recommended that the city take steps to prevent the possibility of a similar accident occurring.

## Iowa Meeting to be Educational

This year a program is being prepared by the Iowa Firemen's Association that will consist of papers designed to inform the members as to the latest methods of fire-fighting.

E. E. Parsons is secretary of the association. He has been secretary for twenty-two years and in addition has served two years as president and two years as vice-president. His total years of service on the board has been twenty-six.

The Iowa firemen have started a ready relief group. Membership in this is one dollar and at present there are two hundred members. Should one of the group die, he is paid whatever is in the treasury at the time, and each of the members is taxed one dollar. A drive is on to secure one thousand members by the time the convention meets in Emmetsburg, Ia., in September.

Plans are also made to print a year book giving the history of the association. If sufficient advertising can not be secured to defray the printing expenses, the matter will be tabled.

## Statement of Ownership

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of FIRE ENGINEERING, published semi-monthly at Albany, New York, for April 1, 1927.

State of New York, County of New York, ss.:

Before me, a Notary Public in and for the state and county aforesaid, personally appeared I. H. Case, who, having been duly sworn according to law, deposes and says that he is the General Manager of FIRE ENGINEERING and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of Congress of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Case-Shepperd-Mann Publishing Corporation, 225 West 34th Street, New York City.

Editor—Robert H. Lockwood, 225 W. 34th Street, New York City.

Managing Editor—Fred Shepperd, 225 W. 34th Street, New York City.

General Manager—I. H. Case, 225 W. 34th Street, New York City.

2. That the owners are:

Case-Shepperd-Mann Publishing Corporation, 225 W. 34th Street, New York City.

I. H. Case, 225 W. 34th Street, New York City.

Fred Shepperd, 225 W. 34th Street, New York City.

K. M. Mann, 225 W. 34th Street, New York City.

R. H. Lockwood, 225 W. 34th Street, New York City.

3. That the known bondholders, mortgagees, and other security holders, owning or holding 1 per cent, or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain, not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

I. H. CASE,
General Manager.

Sworn to and subscribed before me this 29th day of March, 1927.

(Seal) CHARLES H. WHEELOCK,
(My commission expires March 30, 1928.)

**Klamath Falls, Ore., Has New Uniforms**—Firemen in Klamath Falls, Ore., were equipped with new uniforms.

**Cornerstone Laid in Glendora, N. J.**—The cornerstone was laid for the new fire station being built in Glendora, N. J.

**Jefferson City, Mo., Receives New Apparatus**—Two new pieces of fire apparatus has been delivered to Jefferson City, Mo.

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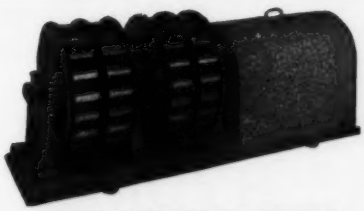

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If you will furnish your firemen with a soft pliable hose that will stand the gaff, using the rocker lugcoupling, they can do better and more efficient work. Bi-Lateral Fire Hose fills this bill.

We can tell you something else about it that will prove interesting.

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Powerful
Handsome
Light projection—4000 ft.

Model No. 21

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The S & M Red Safety-Lite (originated by the S & M Lamp Co.) is rapidly coming into general use on Fire Apparatus. The intense flare of red light can be seen for several blocks and gives warning of approach of Fire Apparatus. Write for descriptive catalog.

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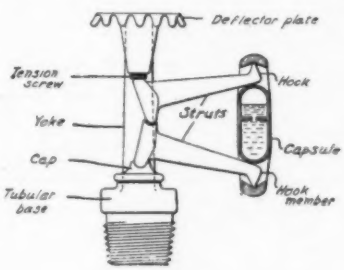
# Recent Patents

## Descriptions of Patents Recently Issued of Interest to Fire Departments—Sprinkler Head—Fire Extinguisher

### Sprinkler Head

A new form of sprinkler head has been patented (No. 1,608,515) by Ernest Franklin Lowe of Plainfield, N. J. This head depends upon the operation of a capsule for its working principle. The illustration is a vertical central section of the head.



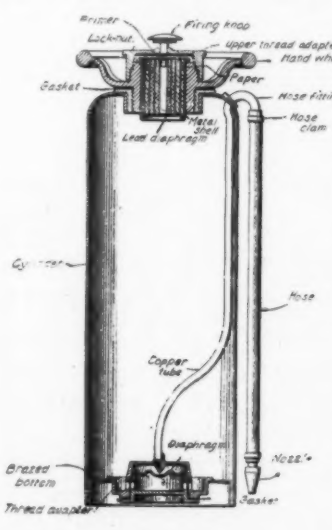

A tubular base is open at both ends and the lower end may be threaded for connection to the water system. The upper end of the tubular base is normally closed by a fluid tight valve or cap or other suitable means. It is normally held in place by two opposed strut members one placed above and supported by the other. The upper strut bears against some such point in the yoke through which a tension adjusting screw extends and contacts with the upper strut. The outer end of the struts may be provided with opposed hook-like members. In the typical construction, a fixed temperature fusible link connects the hook-like members and there is sufficient tension to hold the cap fluid tight.

The hook-like members are connected by the capsule which is made of fracturable material. The capsule is made with compartments that are interconnected. The lower compartment is filled to a predetermined extent with any of the well known liquids having a high coefficient of expansion such as alcohol. In the assembled head, the capsule is sealed against the atmosphere at either end and there are openings which engage the strut members.

Upon the application of heat to the capsule, the liquid inside will expand until sufficient pressure is created to fracture the capsule. This frees the struts and releases the water so that it could strike the deflector plate.

### Fire Extinguisher

An invention that relates to the extinguishing of fires by means of a pyrotechnic element contained in a fire extinguisher has been patented (No. 1,588,233) by Robert Kauch and Charles L. Paulus of Dayton, Ohio. Various kinds of fire extinguishing liquids may be employed as the character of the fluid has no effect on the operation of the extinguisher. The illustration shows a vertical section of the device.




The fire extinguisher consists of a hollow cylindrical shell constructed of sheet metal such as brass. A formed sheet metal bottom is brazed onto the lower end and it carries a thread adapter. In the upper part of the shell there is likewise brazed a thread adapter. A hand wheel is firmly screwed in the upper adapter and an airtight joint is maintained by the use of a leather washer or gasket clamped between the wheel and the adapter.

The hand wheel is so constructed as to provide a large central bore into which is tightly inserted a thin metal shell which contains a slow burning fuselike charge. To this end a strip or tape of asbestos wound paper in spirally placed and coated with a slow burning powder. An airtight joint is maintained upon this part of the mechanism by the use of a thin copper diaphragm which is held in place by a locknut. The nut also has a central opening through which passes the stem of the firing knob. The firing pin of the mechanism is carried upon the inner face of the diaphragm so as to come in contact with a primer arranged in the upper end of an axial opening extending through the pyrotechnic device.

An air tight seal is maintained by a thin metal diaphragm which is formed with concentric corrugations as shown to make the same readily deformable when pressure is applied to it. This diaphragm is seated against a leather washer or gasket. A copper tube has the lower end united to a hose fitting which extends through the upper part of the shell and which receives a flexible service hose fastened to the fitting by an ordinary hose clamp and which has a nozzle at the other.

The pressure for forcing the liquid out of the extinguisher is generated by the heavily coated asbestos paper with a slow burning powder mixture. A strip of this paper is rolled so as to form a practically solid section. The powder charge is contained in the brass shell which is sealed against moisture by a thin lead diaphragm at the inner end.

The primer is discharged by the firing pin on the diaphragm. This action causes a rupture and at the same time ignites the compressed powder charge along its inner surface. The powder burns spirally upward in a manner similar to a time fuse.

The operation of the device follows. When needed a sharp blow is delivered upon the firing knob and this depresses the diaphragm below the firing knob. The firing pin then sets fire to the primer. The powder charge ignites and a hole is blown through the diaphragm at the bottom of the device. This action generates pressure in the container and the pressure is transmitted through two ports at the bottom of the extinguisher. Pressure against the corrugated diaphragm causes distortion and forces the diaphragm against a sharp projecting point of an outlet nozzle which faces towards it. The liquid is then forced on through to the nozzle.

## Department and Other Reports Received

**Belmont, Mass.**—Annual report of the chief of the fire department; nine pages of the activities of this department.

**Fire Department, Springfield, Ohio**—Annual report of Chief Samuel F. Hunter; twenty-one typewritten pages.

**Bureau of Safety, Panama**—Annual report; fifty-three pages with chart and cover.

**Fire Department, Lakewood, O.**—Typewritten copy of the annual report of Chief Joseph H. Speddy.

**Fire Department, Pocatello, Ida.**—Typewritten copy of annual report of Chief A. B. Canfield.

**Fire Department, Columbia, S. C.**—Annual report of Chief A. McC. Marsh, Columbia, S. C.; 102 pages and cover.

**State Fire Marshal, South Dakota**—Nineteenth annual report of the state fire marshal, South Dakota; twenty pages and cover.

**Fire Department, Los Angeles, Cal.**—Fortieth annual report of Los Angeles fire department; fifty-six pages and cover.

**Board of Fire Commissioners, Elizabeth, N. J.**—Annual report; sixty-one pages with tables and cover.

**Philadelphia Fire Insurance Patrol**—Fifty-seventh annual report of the Philadelphia, Pa., Fire Insurance Patrol; fifty-nine pages and cover.

**Department of Public Safety, Michigan**—Typewritten copy of report of Department of Public Safety Fifth Division, Michigan.

**Vermont State Firemen's Association**—Proceedings of thirty-seventh annual convention at Rutland; seventy pages and cover.

**Bureau of Fire, Schenectady, N. Y.**—Condensed report of the Bureau of Fire, Schenectady, N. Y.; sixteen pages and cover.

**Herkimer, N. Y.**—Thirtieth annual report of the municipal commission with the heading "30 Years Successful Municipal Operations." Report of all departments are embodied in this fifty-eight page book.

# FALSE ALARMS

### "Wondering Where You Are, and How You Are"

The composer of the above line in one of the popular songs probably had in mind an incident that occurred in the Denver, Col., department.

In the middle of the night, a company roared down the street in answer to an alarm. When almost there, the captain of the company recalled that the box number had been changed, and the box in question was outside of their district. So he waved his hand, as if to signal for the company to return to quarters. The fireman who was waiting on the rear step for the sign to commence pulling off the hose, thought it was the signal he waited for. He commenced to drag it off feverishly and connected the hose to the nearest hydrant while the truck moved on. When this task was completed, the fireman looked up to find that he was all alone—the apparatus had proceeded on its way to its station.

*Drawing by "Art" Estey*

While on the way to the fire station, the captain did some fast thinking; he recalled that the other apparatus was out of commission, and that it was necessary to respond to that call after all. Again he waved his hand, and again the direction was reversed. When the company reached the fire, the small blaze was in its last flame. When the captain ordered the men to get the hose out, they looked askance at each other—but there was no hose. It was in charge of a lone fireman who would have liked to have been elsewhere.

---

### PROPERLY TRAINED

In one city, a school teacher had the greatest respect for fire prevention. The children of her class were drilled time and time again with the necessity for marching from the room in an orderly fashion should a fire occur.

She would often ask, "What would you do if a fire broke out in this building?"

The children would reply in unison as the result of the constant drilling, "We would rise in our places, step into the aisle and march quietly from the building."

One day a State Fire Marshal of national prominence visited the school room and in order to impress the distinguished visitor with his importance she asked the children, "What would you say if I told you that Fire Marshall B..... was going to speak to us this morning?"

They promptly replied in chorus, "We would rise in our places, step into the aisle and quietly march out of the building."

F. A. RAYMOND.

---

### JUST A FEW TOO MANY

Six fire engines, forty firemen and a large number of policemen, reporters, and photographers answered an alarm in London only to find that a man had accidently singed his hair and a companion had turned in the alarm.

---

### IT DETERIORATED

A fireman making a tour of inspection in the business district sniffed suspiciously as he examined one of the stores.

"My, what smells so?"

"Do you smell it too?" asked the merchant.

"Yes, what is it?"

"Business. It's rotten," was the reply.

### THE FIREMEN—A LAUGHING LOT

There they are—a laughing lot—
Dancing 'round like icebergs come to life.
Jesting, all unmindful of the cold
That chills them to their marrow bones;
Suffering turned to maddened humor;
What to them the frozen water
On their rubber coats, their hats,
Their hands and reddened cheeks?

They seem unhuman in their grim delight,
Automatons awakened by the flaming light
That stirs the very stillness of the night.
What to them the smothering smoke, the flames,
The falling walls, the blindness of it all,
The frozen air the heat, spreading like a pall,
Makes lesser men heed Warmth's seductive call?
They will not quit the frosted, burning scene,
Nay; not until the last small ember dies,
And peaceful silence fills again the skies,
And the fiery Scourge, defeated, helpless lies.

A laughing lot, I called them.
Aye, I saw them when their work was done—
They laughed like any human thing,
Oblivious of the victory they had won,
The dangers they had faced,
The terrors they had raced
And won: they laughed, and you would, too.
If cold had chilled your carcass through and through.
And if in humor-filled forgetfulness
You found a respite from the suffering,
And humor comes, it seems, at times to bless
And take from pain its soul-encircling sting.

But did they laugh when Duty bade them fight,
The awful terror of the wintry night?
Ah, nay, there was no laughter then!
They grit their teeth like fighting men,
That see a foe upon their fellows creep,
They fought, Ah, God! the maddening thrill
Of fighting foes that only seek to kill.
Not for themselves they fought; they faced no loss;
But in their souls the voice of Duty spoke,
And when it spoke a fighting spirit woke,
And urged them on., they knew not why.
Their courage grew as vast as endless sky.
There was no laughter then; no humor gay;
No time to waste in idle, jesting play.
Theirs but the hidden urge to fight the thing,
Unmindful of their safety. They knew their work;
They faced the dreadful task. Not theirs to shirk,
Or shake the icy throes that on them cling.

Ah, ye who snugged in quilted comfort sleep,
What know ye of the vigils which they keep?
The pain which they endure,
The sufferings which their courage doth but reap?
Ye know these not—ye are secure.

And there they are, a laughing lot—
Their duty done; the fire is out.
The Night alone remembers what
Grim terrors Laughter put to rout.

THOMAS F. MCCARTHY.

# B & M SIREN

**Did You Hear Our Sirens While You Were in New Orleans?**

You could not have helped hearing them. Fire Chief Evans' car had one on, the Ahrens-Fox Aerial Ladder had one on their exhibit car and have made the B & M Siren standard equipment on their apparatus. The American-LaFrance Fire Engine Company had a B & M on their exhibit car; our own demonstrator was there, and I know that you heard the Sirens in the parade. We blew them steadily for one and a half hours without any intermission. The B & M is the only siren today that you can blow for that length of time. Why? Because it is mechanically driven.

**Write for complete information. We gladly send B & M Sirens to any city on approval, transportation prepaid.**

**B & M Siren Manufacturing Co.**

Lester H. Miles, Owner

931 So. Main St. Los Angeles, Calif.

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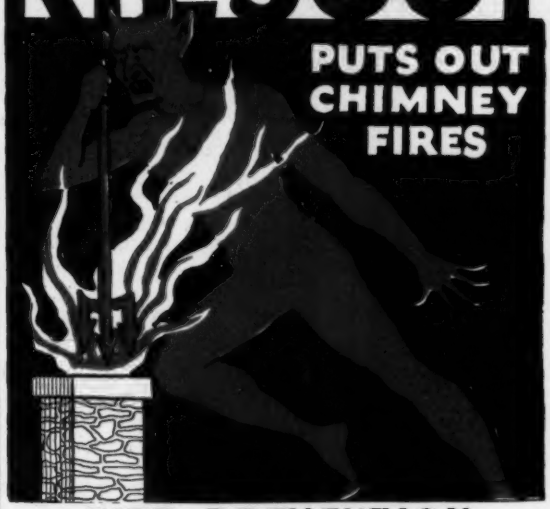


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We repeat our offer to send liberal samples and full details regarding this remarkable chemical product—gladly furnished upon request.

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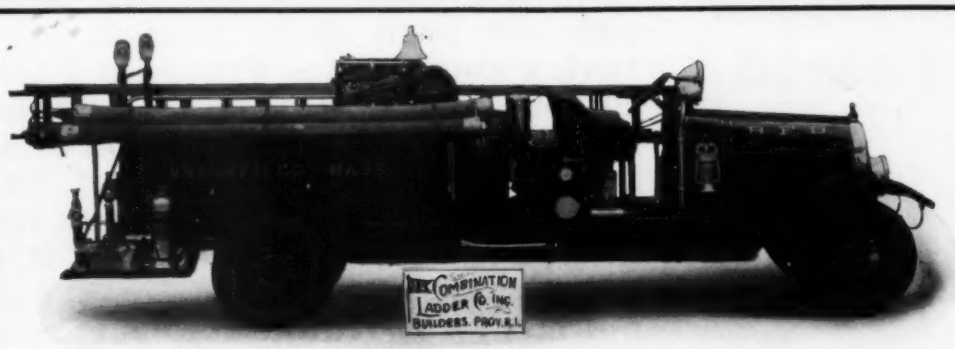


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**Every Underwriter's Test to which pumpers equipped with Waukesha "Ricardo" Head engines have been put has been easily passed. In a twelve hour test, at Franklin Park, Ill., on January 8th, 1927, a Pirsch Pumper, lifting 4 feet, delivered an average of 768 G. P. M. at 130 pounds net pump pressure thru two lines, 100 feet and 50 feet of C. R. L. hose, siamesed into 1¼ in. tip. It's an old story for Waukesha "Ricardo" Head engines, but may be new to you. These engines always make good.**

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D-727-L

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63 Jacks for Fire Trucks.
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**To get this information just run down the lists on both sides and mail the coupon to us filled out with name and address and with the numbers that indicate the equipment in which you are particularly interested.**

**We will then notify reliable manufacturers of such equipment of your interest and request that they send you complete information. They will gladly do this and it will be a pleasure for us to help you in this way. So go to it! Help yourself.**

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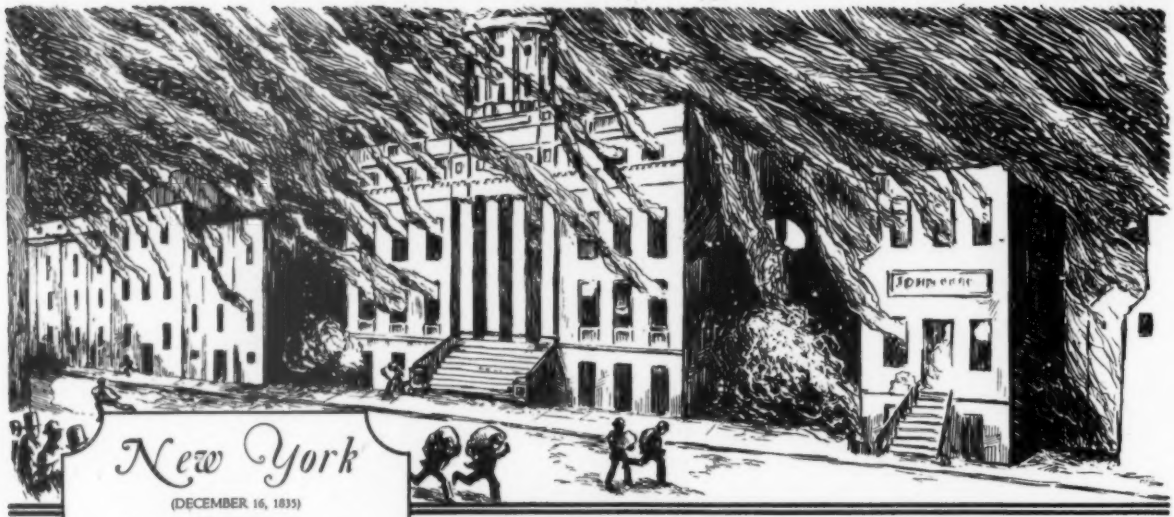

# Great Fires of History

## New York

(DECEMBER 16, 1835)

The famous New York fire, commonly called the "Great Fire", occurred on the night of December 16, 1835.

At between 8 and 9 o'clock in the evening, fire was discovered in the store at No. 25 Merchant St., a narrow street leading from Pearl into Exchange St., near where the Post Office then was.

The flames spread rapidly and at 10 o'clock 40 of the most valuable dry goods stores in the city were either burned down or on fire.

The narrowness of Merchant St. and the gale which was blowing aided the spread of destruction. Passing from building to building, it leaped across the street and proceeded to spread for blocks.

The night was bitter cold and despite the most stringent efforts of the firemen the water froze in the hose, handicapping the men in their work. At one time 300 buildings were burning simultaneously.

When the fire was finally extinguished, 600 buildings had been destroyed at a loss of $20,000,000. Among the most important ones being, the Merchants' Exchange, the Post Office, and the offices of several celebrated banking institutions.

"The great fire" of 1835 while it represented tremendous loss to the City of New York did not deter its citizens from making it the largest City in the world, nor from building up a Fire Department second to none.

Two hundred and eighty-four pieces make up the American-LaFrance fleet in New York—by far the largest fleet of fire apparatus of one make owned by any American city. Several types of equipment are represented in this array, but two hundred and nine pumping engines, one of the most important of all fire fighting units, constitute the majority.

It is equally interesting and important to everybody interested in modern fire protection to know that New York has added to its American-LaFrance fleet not less than twenty units a year for the last seven years.

AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

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NEW YORK ATLANTA PHILADELPHIA BALTIMORE CHICAGO BOSTON PITTSBURGH

ELMIRA, N.Y.
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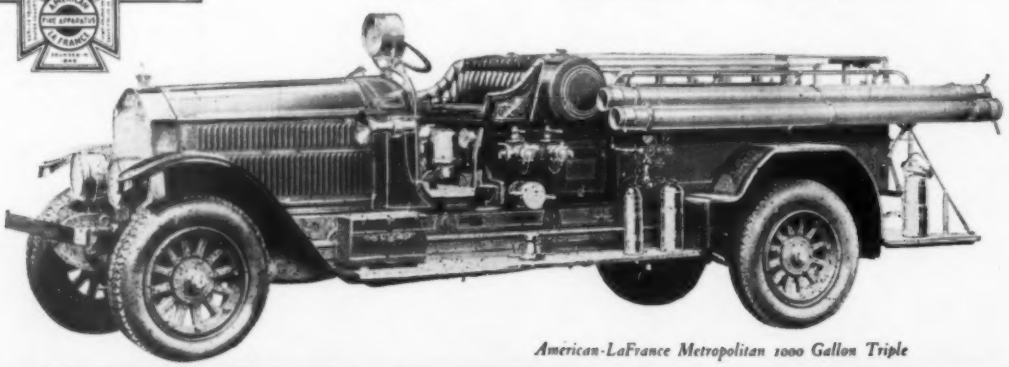

American-LaFrance Metropolitan 1000 Gallon Triple

# ADVERTISING INDEX

***Advertising Pays — in Fire Engineering***


| | PAGE |
|---|---|
| Ahrens-Fox Fire Engine Co. | 369 |
| American District Telegraph Co. | *Front Cover* |
| American-LaFrance Engine Co. | 412 |
| American Steam Pump Co. | 398 |
| Bi-Lateral Fire Hose Co. | 405 |
| B. & M. Mfg. Co. | 409 |
| Braxmar Co., C. G. | 398 |
| Brown Machine & Tool Co., L. P. | 402 |
| Buffalo Fire Appliance Corp. | 393 |
| C. A. M. Mfg. Co. | 397 |
| Carpenter Mfg. Company | 401 |
| Clay, Inc., John H. | 406 |
| Combination Ladder Co. | 409 |
| Darling Valve & Mfg. Co. | 370 |
| Eastman Co., Samuel | 402 |
| Eddy Valve Co. | 406 |
| Eureka Fire Hose Mfg. Co. | *Back Cover* |
| Evans & Co., Geo. | 405 |
| Everson-Ross Co. | 401 |
| Fabric Fire Hose Co. | 373 |
| Federal Electric Co. | *Inside Front Cover* |
| Firestone Tire & Rubber Co. | 372 |
| Foamite-Childs Corp. | 371 |
| Fulton Bag & Cotton Mills | 398 |
| Gibbs-Wahlert Mask Co. | 405 |
| Hahn Motor Truck Co. | 405 |
| Hale Fire Pump Co. | 409 |
| Hendrie & Bolthoff Mfg. & Supply Co. | 405 |
| **Information for Buyers** | **411** |
| International Harvester Co. | 405 |
| Johns Manville Corp. | *Inside Back Cover* |
| Kilsoot Chemical Co. | 409 |
| Mack Trucks, Inc. | 394 |
| Maxim Motor Co. | 406 |
| Morse & Sons, Inc., Andrew J. | 402 |
| National Electric Specialty Co. | 401 |
| Nott Co., W. S. | 374 |
| Pirsch & Sons Co., Peter | 405 |
| Quaker City Rubber Co. | 409 |
| Rensselaer Valve Co. | 406 |
| S. & M. Lamp Co. | 405 |
| Sanford Motor Truck Co. | 405 |
| Seagrave Corp. | 367 |
| Siracode Signal Corp. | 405 |
| Southworth Machine Co. | 405 |
| Sterling Siren Fire Alarm Co. | 394 |
| Union Water Meter Co. | 401 |
| Waterous Fire Engine Works | 405 |
| Waukesha Motor Co. | 410 |
| Wood & Co., R. D. | 401 |
| Woodhouse Mfg. Co. | 402 |



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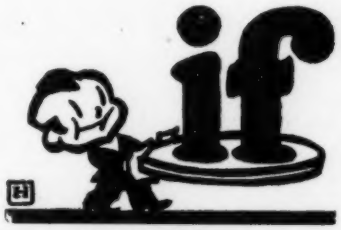


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